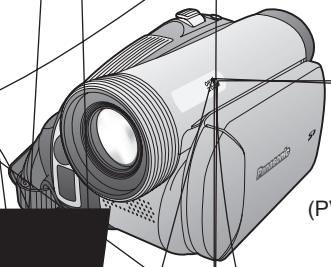
Panasonic®

DIGITAL Palmcorder®
CAMCORDER

Digital Video Camcorder

Operating Instructions

Models No. **PV-GS59**
PV-GS39
PV-GS29



(PV-GS59 Shown)



Before attempting to connect, operate or adjust this product, please read these instructions thoroughly.

Spanish Quick Use Guide is included.
Guía para rápida consulta en español está incluida.

SD™ Mini DV CERTIFIED USB HI-SPEED CERTIFIED USB

For assistance, please call : 1-800-211-PANA(7262) or, contact us via the web at: http://www.panasonic.com/contactinfo

For assistance, please call : 1-800-561-5505 or visit us at www.panasonic.ca

LSQT1000 B

You have purchased one of the most sophisticated and reliable products on the market today. Used properly, we're sure it will bring you and your family years of enjoyment. Please take time to fill in the information on the right.
The serial number is on the tag located on the underside of your Camcorder. Be sure to **retain this manual** as your convenient Camcorder information source.

Date of Purchase

Dealer Purchased From

Dealer Address

Dealer Phone No.

Model No.

Serial No.

WARNING :

TO PREVENT FIRE OR SHOCK HAZARD, DO NOT EXPOSE THIS EQUIPMENT TO RAIN OR MOISTURE.

This symbol alerts the user that important literature concerning the operation and



Important Safety Instructions

1) Read these instructions.

2) Keep these instructions.

3) Heed all warnings.

4) Follow all instructions.

5) Do not use this apparatus near water.

6) Clean only with dry cloth.

7) Do not block any ventilation openings. Install in accordance with the manufacturer's instructions.

8) Do not install near any heat sources such as radiators, heat registers, stoves, or other apparatus (including amplifiers) that produce heat.

9) Do not defeat the safety purpose of the polarized or grounding-type plug. A polarized plug has two blades with one wider than the other. A grounding type plug has two blades and a third grounding prong. The wide blade or the third prong are provided for your safety. If the provided plug does not fit into your outlet, consult an electrician for replacement of the obsolete outlet.

10) Protect the power cord from being walked on or pinched particularly at plugs, convenience receptacles, and the point where they exit from the apparatus.

11) Only use attachments/accessories specified by the manufacturer.

12) Use only with the cart, stand, tripod, bracket, or the table specified by the manufacturer, or sold with the apparatus. When a cart is used, use caution when moving the cart/apparatus combination to avoid injury from tip-over.


S3125A

13) Unplug this apparatus during lightning storms or when it will be left unused for long periods of time.

14) Refer all servicing to qualified service personnel. Servicing is required when the apparatus has been damaged in any way, such as when the power-supply cord or plug is damaged, liquid has been spilled or objects have fallen into the apparatus, the apparatus has been exposed to rain or moisture, does not operate normally, or has been dropped.

Precautions

USE & LOCATION

⚠ WARNING

- **TO AVOID SHOCK HAZARD ...** Your Camcorder and power supply should not be exposed to rain or moisture. Do not connect the power supply or operate your Camcorder if it gets wet. Your Camcorder has been designed for outdoor use, however it is not designed to sustain direct exposure to water, rain, sleet, snow, sand, dust, or a direct splashing from a pool or even a cup of coffee. This action could permanently damage the internal parts of your Camcorder. Do not attempt to disassemble this unit. There are no user serviceable parts inside. Unplug your Camcorder from the power supply before cleaning.

⚠ CAUTION

- **DO NOT AIM YOUR CAMCORDER AT THE SUN OR OTHER BRIGHT OBJECTS**
- **DO NOT LEAVE THE CAMCORDER WITH THE EVF AIMED DIRECTLY AT THE SUN AS THIS MAY CAUSE DAMAGE TO THE INTERNAL PARTS OF THE EVF**
- **DO NOT EXPOSE YOUR CAMCORDER TO EXTENDED HIGH TEMPERATURE ...** Such as, in direct sunlight, inside a closed car, next to a heater, etc... This action could permanently damage the internal parts of your Camcorder.
- **AVOID SUDDEN CHANGES IN TEMPERATURE ...** If the unit is suddenly moved from a cold place to a warm place, moisture may form on the tape and inside the unit.
- **DO NOT LEAVE YOUR CAMCORDER OR THE POWER SUPPLY TURNED ON WHEN NOT IN USE.**
- **STORAGE OF YOUR CAMCORDER ...** Store and handle your Camcorder in a manner that will not subject it to unnecessary movement (avoid shaking and striking). Your Camcorder contains a sensitive pick-up device which could be damaged by improper handling or storage.

CARE

- **TO CLEAN YOUR CAMCORDER ...** Do not use strong or abrasive detergents when cleaning your Camcorder body.
- **TO PROTECT THE LENS ...** Do not touch the surface of the lens with your hand. Use a commercial Camcorder lens solution and lens paper when cleaning the lens. Improper cleaning can scratch the lens coating.
- **TO PROTECT THE FINISH OF YOUR CAMCORDER ...** Before handling your Camcorder, make sure your hands and face are free from any chemical products, such as suntan lotion, as it may damage the finish.

Apparatus Claims of U.S. Patent Nos. 4,631,603, 4,577,216, and 4,819,098, licensed for limited viewing.
This product incorporates copyright protection technology that is protected by method claims of certain U.S. patents and other intellectual property rights owned by Macrovision Corporation and other rights owners. Use of this copyright protection technology must be authorized by Macrovision Corporation, and is intended for home and other limited viewing uses only unless otherwise authorized by Macrovision Corporation. Reverse engineering or disassembly is prohibited.

- If you see this symbol -



Information on Disposal in other Countries outside the European Union

This symbol is only valid in the European Union.
If you wish to discard this product, please contact your local authorities or dealer and ask for the correct method of disposal.

End User License Agreement (for USB Driver, MotionDV STUDIO and Quick Movie Magic)

Before opening the CD-ROM package (PV-GS59 Only), please read the following.

You (“Licensee”) are granted a license for the Software defined in this End User Software Agreement (“Agreement”) on condition that you agree to the terms and conditions of this Agreement. If Licensee does not agree to the terms and conditions of this Agreement, promptly return the Software to Matsushita Electric Industrial Co., Ltd. (“Matsushita”), its distributors or dealers from which you made the purchase.

Article 1 License
Licensee is granted the right to use the software, including the information recorded or described on the CD-ROM, instruction manuals, and any other media provided to Licensee (collectively “Software”), but all applicable rights to patents, copyrights, trademarks and trade secrets in the Software are not transferred to Licensee.

Article 2 Use by a Third Party
Licensee may not use, copy, modify, transfer or allow any third party, whether free of charge or not, to use, copy or modify the Software, except as expressly provided for in this Agreement.

Article 3 Restrictions on Copying the Software
Licensee may make a single copy of the Software in whole or in part solely for back-up purpose.

Article 4 Computer
Licensee may only use the Software on a single computer at a single location.

Article 5 Reverse Engineering, Decompiling or Disassembly
Licensee may not reverse engineer, decompile, or disassemble the Software, except to the extent either of them is permitted under law or regulation of the country where Licensee resides. Matsushita, or its distributors or dealers will not be responsible for any defects in the Software or damage to Licensee caused by Licensee’s reverse engineering, decompiling, or disassembly of the Software.

Article 6 Limitation of Liability
The Software is provided “AS-IS” without warranty of any kind, either expressed or implied, including, but not limited to, warranties of non-infringement, merchantability and/or fitness for a particular purpose. Further, Matsushita does not warrant that the operation of the Software will be uninterrupted or error free. Matsushita or any of its distributors or dealers will not be liable for any damage suffered by Licensee arising from or in connection with Licensee’s use of the Software.

Article 7 Export Control
Licensee agrees not to export or re-export to any country the Software in any form without the appropriate export licenses under regulations of the country where Licensee resides, if necessary.

Article 8 Termination of License
The right granted to Licensee hereunder will be automatically terminated if Licensee violates any of the terms and conditions of this Agreement. Upon such automatic termination, Licensee must destroy the Software and related documentation together with all the copies thereof at Licensee’s own expense.

Differences between models

This operating instruction book is designed for use with models **PV-GS29**, **PV-GS39** and **PV-GS59**. The **PV-GS59** is the model used for illustrative purposes. Features may vary, so please read carefully.

Model Number	PV-GS29	PV-GS39	PV-GS59
Battery Pack (Supplied)	CGR-DU06 (640 mAh)	CGR-DU06 (640 mAh)	For U.S.A. customers: CGR-DU06 (640 mAh) For Canada customers: CGA-DU12 (1 150 mAh)
CD-ROM	–	–	Supplied (LSFT0648)
USB Cable	–	For U.S.A. customers: – For Canada customers: Supplied (K1HA05CD0014)	Supplied (K1HA05CD0014)
Card Feature	No	Yes	Yes
Monitor	2.5-inch LCD	2.7-inch Wide LCD	2.7-inch Wide LCD
USB Jack*	No	Yes (Full-Speed)	Yes (High-Speed)
Audio Dubbing	No	No	Yes
Recording a Still Picture on a Tape	Yes	No	No
Cinema Function	Yes	No	No
Wide/4:3 Function	No	Yes	Yes
Remote Control Sensor	No	No	Yes

* It is only compatible with USB 2.0 PCI Card and/or connection.

How to Turn off the Demo Mode

To terminate the demonstration mode, insert a cassette or set the [DEMO MODE] to [OFF] as follows.

1 Set [SETUP] >> [DEMO MODE] >> [OFF].

With a PC (Operating System Compatibility Chart)

Before using the PC function (pp. 56~69), please refer to the OS (operating system) compatibility chart, below.

For Windows

Model Number	Windows OS	Built-in SD Drive	Web Camera	MotionDV STUDIO/ Quick Movie Magic
PV-GS29	Windows 2000	–	–	–
	Windows XP	–	–	–
PV-GS39	Windows 2000	Yes*	Yes (SP4 or later)	–
	Windows XP	Yes*	Yes (SP2 or later)*	–
PV-GS59	Windows 2000	Yes*	Yes (SP4 or later)	Yes (SP4 or later)
	Windows XP	Yes*	Yes (SP1 or later)	Yes (SP2 or later)

For Macintosh

Model Number	Macintosh OS	Built-in SD Drive	Web Camera	MotionDV STUDIO/ Quick Movie Magic
PV-GS29	X v 10.1 - v 10.4	–	–	–
PV-GS39	X v 10.1 - v 10.4	Yes*	–	–
PV-GS59	X v 10.1 - v 10.4	Yes*	–	–

* The USB equipment operates with the driver installed standard on your OS.

For Macintosh (DV connection)

Model Number	Macintosh OS	iMovie/iMovieHD
PV-GS29	X v 10.3 - v 10.4	Yes
PV-GS39	X v 10.3 - v 10.4	Yes
PV-GS59	X v 10.3 - v 10.4	Yes

Contents

Before Using

Things You Should Know 2
Safety Precautions 2
Precautions....5
End User License Agreement....6
Differences between models 7
With a PC (Operating System Compatibility Chart) ...8
Quick Guide....10
Standard Accessories....12
Parts Identification and Handling....12
The Remote Control (PV-GS59 Only : Optional)..14
Power Supply 15
Charging Time and Available Recording Time 16
How to remove the Sensor tag (For U.S.A. customers)....17
To Use as a Grip Belt 17
Re-attaching the Lens Cap....17
Attaching the Shoulder Strap....18
Inserting/Removing a Cassette 18
Using a Memory Card (Optional) (For PV-GS39/PV-GS59)....19
Turning on the Camcorder....20
Setting Date and Time....21
Using the Viewfinder/LCD Monitor 21
Easy to Use Mode Dial 23
How to Use the Joystick Control....23
Using the Menu Screen 25
Selecting Language....26
List of Menus 26
LP Mode 29

Recording Mode

About Recording....30
Recording on a Tape 30
To Check the Recording....31
Finding the End of Recording (Blank Search Function) 31
Recording a Still Picture on a Tape (PV-GS29 Only)....31
Recording a Still Picture on a Card (Photoshot) (For PV-GS39/PV-GS59)....32
Recording Yourself....33
Recording with the Built-in LED Video Light....33
Quick Start....34
Self-timer Recording (For PV-GS39/PV-GS59)....35
Zoom In/Out Functions 35
Digital Zoom Function....36
Image Stabilizer Function 36
Fade In/Out Functions 37
Backlight Compensation Function 37
MagicPix Function 38
Soft-Skin Mode 38
Wind Noise Reduction Function 39
Cinema Function (PV-GS29 Only) 39
Wide/4:3 Function (For PV-GS39/PV-GS59) 39
Recording in Special Situations (Scene Mode) 40
Recording in Natural Colors (White Balance)....41
Manual Shutter Speed Adjustment....42
Manual Iris Adjustment (F Number)....43
Manual Focus Adjustment 44

Playback Mode

Playing Back a Tape....45
Finding a Scene You Want to Play Back....46
Slow Motion Playback (PV-GS59 Only) 46
Still Playback/Still Advance Playback....47
Playing Back a Memory Card (For PV-GS39/PV-GS59)....47
Slide Show (For PV-GS39/PV-GS59) 48
Deleting the Files Recorded on a Card (For PV-GS39/PV-GS59)....49
Writing Printing Data on a Card (DPOF Setting) (For PV-GS39/PV-GS59)....50
Protecting the Files on a Card (Lock Setting) (For PV-GS39/PV-GS59)....50
Formatting a Card (For PV-GS39/PV-GS59) 51
Playing Back on Your TV....51

Editing Mode

Recording from a Tape onto a Card (For PV-GS39/PV-GS59)....53
Audio Dubbing (PV-GS59 Only) 53
Copying onto a DVD Recorder or a VCR (Dubbing)....54
Using the DV Cable for Recording (Digital Dubbing)....54
PC Connection With DV Interface Cable 55

With a PC

Using Camcorder with a PC 56
Using the USB Function 56
To disconnect USB cable safely....59
Using as a Web Camera 60
Using the Motion Picture Editing Software (PV-GS59 Only)....64
If you no longer need software or driver (Uninstall)....67
Transferring Motion DV Tape Pictures (Camcorder→Macintosh) via DV Cable (iMovie / iMovie HD) 67
Notes 68

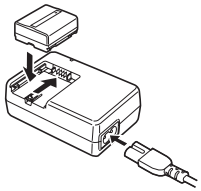
Others

Indications 70
Warning/Alarm Indications....71
Cautions for Use 72
Before Requesting Service (Problems and Solutions) 75
Using the RESET button 78
Explanation of Terms....79
Specifications 80
Camcorder Accessory System 81
Camcorder Accessory Order Form (For U.S.A. customers)....82
Request for Service Notice (For U.S.A. customers)....83
Limited Warranty (For U.S.A. customers)....84
Customer Services Directory....85
Warranty (For Canada customers)....86
Spanish Quick Use Guide/Guía Para Uso Rápido 87
Guía rápida....88
Index....90

Quick Guide

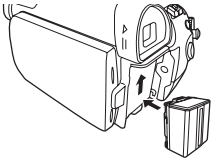
Using the Battery

1 Attach the Battery to the AC Adaptor and charge it.



- Before use, fully charge the Battery.
- Since the Battery will not be charged when the DC Cable is connected to the AC Adaptor, disconnect it from the AC Adaptor.
- The [CHARGE] Lamp lights up, and charging starts.
- When the [CHARGE] Lamp goes off, charging is completed.

2 Attach the charged Battery to the Camcorder.

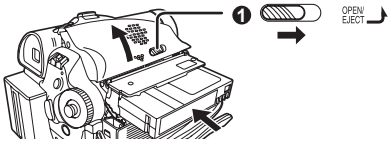


Inserting a Cassette

1 Slide the [OPEN/EJECT] Lever ❶ toward the front and pull up to fully open the Cassette Compartment Cover.

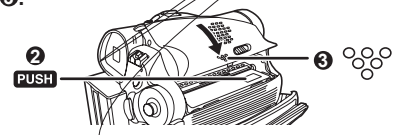
- To protect the tape, if the cover is not fully opened, the cassette holder cannot be ejected.

2 After the Cassette Holder is opened, insert a Cassette.



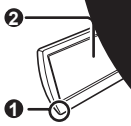
3 Close the Cassette Holder by pressing the [PUSH] mark ❷.

4 Only after the Cassette Holder is completely housed, close the Cassette Compartment Cover by pressing the mark ❸.



Inserting

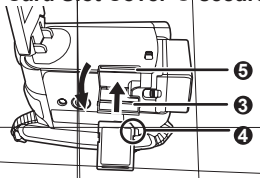
1 Place you
and pull th
direction o



2 Open the Card Slot Cov

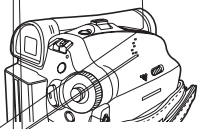
3 While holding the Memory Card with its cut corner facing right ❹ insert it into the Card Slot ❺.

4 Close the Card Slot Cover ❸ securely.



1

.



How to Turn off the Power

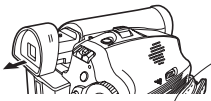
2

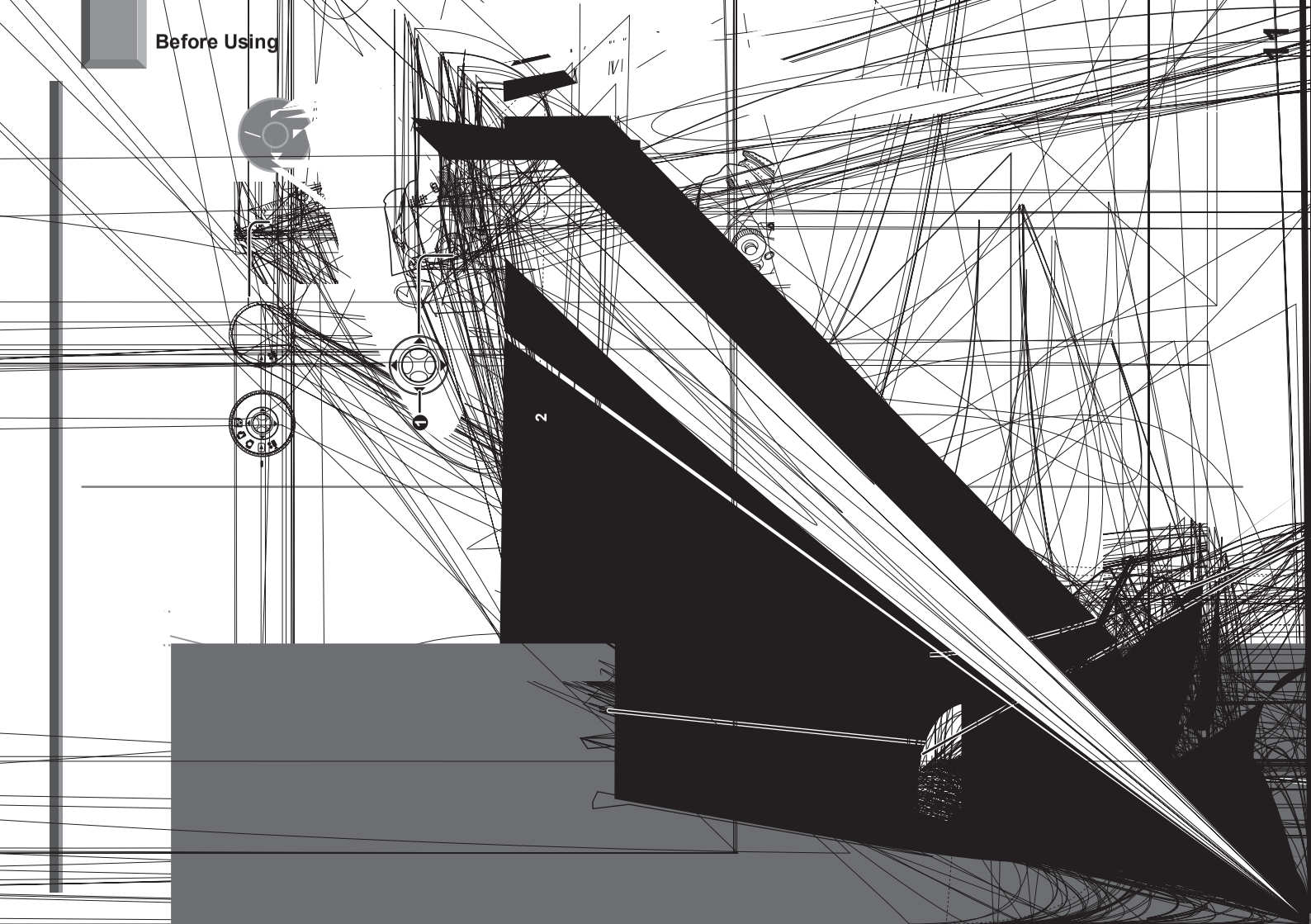
.

Using the Viewfinder

Before using the Viewfinder, adjust the field of view so that the displays inside the Viewfinder become clear and easy to read.

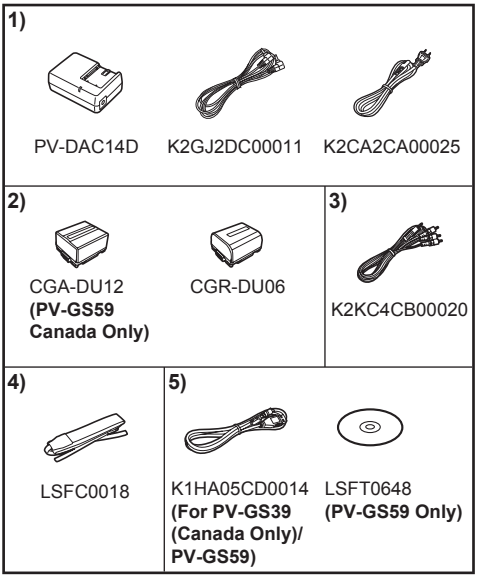
1 Pull the Viewfinder.




2

Standard Accessories

The following accessories are supplied with your Camcorder.



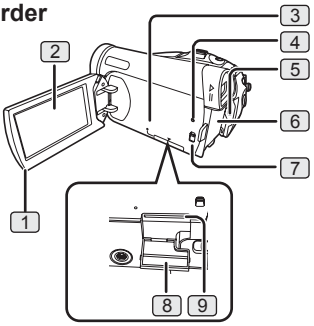
1) **AC Adaptor, DC Cable and AC Cable (pp. 15~16)**

CAUTION:
This unit will operate on 110/120/220/240 V AC. An AC plug adaptor may be required for voltages other than 120 V AC. Please contact either a local or foreign electrical parts distributor for assistance in selecting an alternate AC plug.
We recommend using the accessory power plug adaptor (VJSS0070/KZDB4ZE00001) in an area which has special AC outlets.

2) **Battery Pack (pp. 15~16)**
3) **AV Cable (pp. 51, 54)**
4) **Shoulder Strap (p. 18)**
5) **USB Cable and CD-ROM (pp. 56, 58~59, 61, 67)**

Parts Identification and Handling

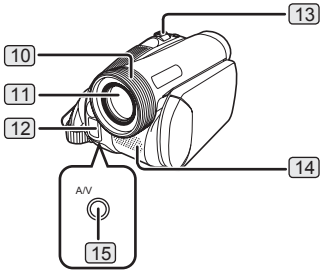
Camcorder



1 **LCD Monitor Open Knob [OPEN] (p. 22)**
2 **LCD Monitor (pp. 20~22, 75)**

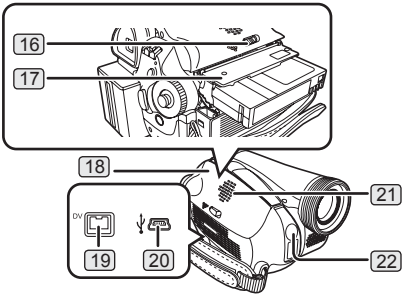
Due to limitations in LCD production technology, there may be some tiny bright or dark spots on the LCD Monitor screen.
However, this is not a malfunction and does not affect the recorded picture.

3 **Card Access Lamp (p. 20)**
4 **Reset Button [RESET] (pp. 76, 78)**
5 **DC Input Jack [DC IN] (p. 15)**
6 **Battery Holder (p. 16)**
7 **Mode Selector Switch [AUTO/MANUAL/FOCUS] (pp. 30, 40~44)**
8 **Card Slot Cover (pp. 19~20)**
9 **Card Slot (pp. 19~20)**



10 **Lens Hood (p. 75)**
11 **Lens**
12 **White Balance Sensor (p. 42)**
Remote Control Sensor (PV-GS59 Only) (p. 15)
13 **Zoom Lever [W/T] (pp. 35, 36)**
Volume Lever [– / VOL +] (pp. 45, 47)
14 **Microphone (built-in, stereo) (pp. 35, 39)**

15 **Audio-Video Output Jack [AV OUT] (pp. 51, 54)**
- Connecting an AV Cable to this jack activates the Camcorder's built-in speaker.
- When connecting the pin plug of the AV Cable to this jack, plug it in as far as it goes.



16 **Cassette Eject Lever [OPEN/EJECT] (p. 18)**

17 **Cassette Holder (pp. 18~19)**

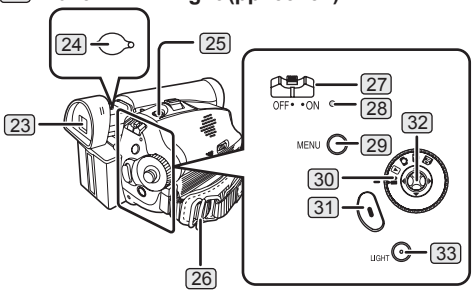
18 **Cassette Compartment Cover (pp. 18~19)**

19 **DV Input/Output Terminal (pp. 54~55, 67~68)**
- Connect this to the digital video equipment.

20 **USB Jack [⇜] (For PV-GS39/PV-GS59) (pp. 58~59, 61, 67)**

21 **Speaker (p. 45)**

22 **Built-in LED Light (pp. 33~34)**



23 **Viewfinder (pp. 20~22, 75)**

Due to limitations in LCD production technology, there may be some tiny bright or dark spots on the Viewfinder screen.
However, this is not a malfunction and does not affect the recorded picture.

24 **Eyepiece Corrector Knob (p. 21)**

25 **Photoshot Button [PHOTO SHOT] (pp. 31, 32)**

26 **Shoulder Strap Holders (p. 18)**

27 **Power Switch [OFF/ON] (p. 20)**

28 **Status Indicator [STATUS] (pp. 20~21, 34)**

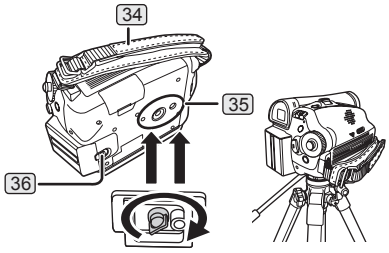
29 **Menu Button [MENU] (p. 25)**

30 **Mode Dial (p. 23)**

31 **Recording Start/Stop Button (p. 30)**

32 **Joystick Control (pp. 23, 25)**

33 **Light Button [LIGHT] (pp. 33~34)**



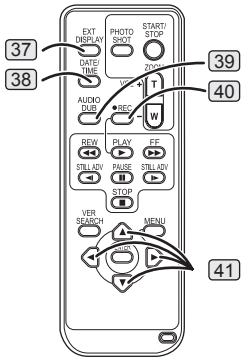
34 **Grip Belt (p. 17)**

35 **Tripod Receptacle**
- This is a hole for attaching the Camcorder to optional tripod. (Please carefully read the Operating Instructions for how to attach the tripod to the Camcorder.)
- You cannot open the Card Slot Cover when the tripod is used. Insert the card first and then attach the tripod.

36 **Battery Eject Switch [BATTERY RELEASE] (p. 16)**

Remote Control (PV-GS59 Only : Optional)

Using the Remote Control with the Camcorder, most of the Camcorder functions can be operated from a distance.



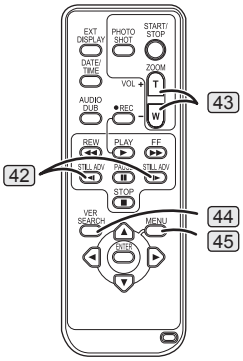
37 **Indication Output Button [EXT DISPLAY] (pp. 52, 54)**

38 **Date/Time Button [DATE/TIME] (p. 28)**

39 **Audio Dubbing Button [AUDIO DUB] (p. 53)**

40 **Recording Button [● REC] (p. 55)**

41 **Cursor buttons for Variable Speed Search Function [▲, ▼] (p. 46)**
Select Button [▲▼◄►] (p. 26)

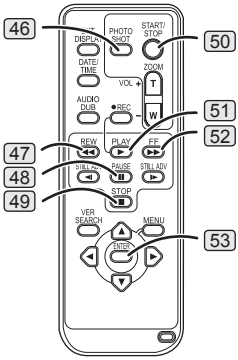


42 **Slow Motion/Still Advance Buttons [◄I, I►] (◄I: reverse, I►: forward) (p. 46)**

43 **Zoom/Volume Button [ZOOM/VOL]* (pp. 35~36, 45)**

44 **Variable Speed Search Button [VER SEARCH] (p. 46)**

45 **Menu Button [MENU]* (p. 26)**



46 **Photoshot Button [PHOTO SHOT]* (p. 32)**

47 **Rewind/Review Button [◄◄] (p. 46)**

48 **Pause Button [▮▮] (pp. 47, 53, 55)**

49 **Stop Button [■] (pp. 15, 55)**

50 **Recording Start/Stop Button [START/STOP]* (p. 30)**

51 **Play Button [►] (pp. 46~47, 55)**

52 **Fast Forward/Cue Button [►►] (p. 46)**

53 **Enter Button [ENTER] (p. 26)**

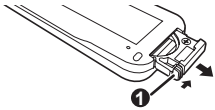
* means that these buttons function in the same manner as the corresponding buttons on the Camcorder.

The Remote Control (PV-GS59 Only : Optional)

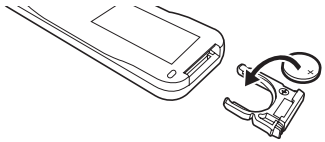
Inserting the Button-type Battery

Before using the Remote Control, insert a button-type battery (not supplied).

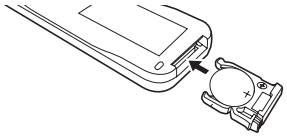
1 While pressing the Lock Button ❶, pull out the Battery Holder.



2 Insert a button-type battery (CR2025) with the (+) marking facing upward.



3 Insert the Battery Holder into the Remote Control.



- When the button-type battery is exhausted, replace it with a new CR2025 battery. (A battery is normally expected to last about 1 year. However, it depends on operation frequency.)
- Make sure to match the poles correctly when inserting the button-type battery.

⚠ WARNING

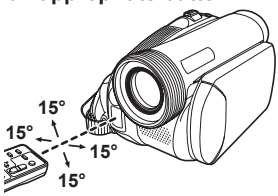
- Use Battery with Panasonic type CR2025 only. Use of another battery may present a risk of fire or explosion.
- Battery may explode if mistreated.
- As with any small object, this type of Battery can be swallowed by young children. Do not allow children to handle this Battery.

⚠ CAUTION

- Dispose of used battery promptly.
- Do not recharge, disassemble or dispose of in fire.

Using the Remote Control (PV-GS59 Only : Optional)

1 Direct the Remote Control at the Remote Control Sensor of the Camcorder and press an appropriate button.



- Distance from the Camcorder: Within approximately 15 feet (5 meters)
- Angle: Within approximately 15° in the vertical and horizontal directions from the central axis

- The above operating ranges are for indoor use. Outdoors or under strong light, the Camcorder may not operate properly even within the above ranges.

Selecting Remote Control Modes

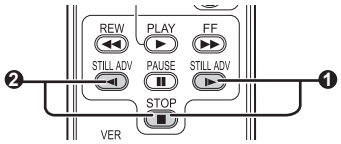
When 2 Camcorders are used simultaneously, they can be operated individually by selecting different Remote Control Modes.

- If the Remote Control Mode of the Camcorder and that of the Remote Control do not match with each other, [REMOTE] will appear. When the Remote Control is operated for the first time after the Camcorder is turned on, [CHECK REMOTE MODE] (p. 71) will appear and operation is impossible. Set the same Remote Control Mode.

Setup on the Camcorder

Set [REMOTE] on the [SETUP] Sub-Menu to the desired Remote Control Mode. (pp. 27, 28)

Setup on the Remote Control



[VCR1]:
Press the [I►] Button and [■] Button simultaneously. ❶

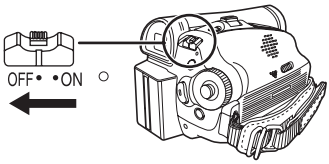
[VCR2]:
Press the [◄I] Button and [■] Button simultaneously. ❷

- When the battery in the Remote Control is replaced, the mode is automatically reset to [VCR1] Mode.

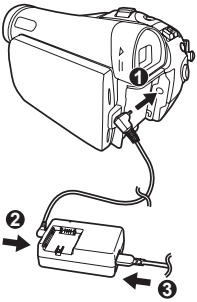
Power Supply

Using the AC Adaptor

- **Before connecting or disconnecting the power supply, set the [OFF/ON] Switch on the Camcorder to [OFF] and make sure that [STATUS] Indicator is not lit. (p. 20)**



1 Connect the DC Cable to the Camcorder.
2 Connect the DC Cable to the AC Adaptor.
3 Connect the AC Cable to the AC Adaptor and the AC Jack.

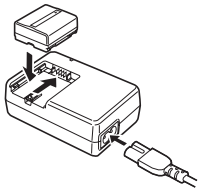


Using the Battery

Before use, fully charge the Battery.

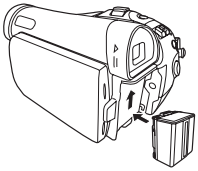
- We recommend using a Panasonic Battery.
- We cannot guarantee the quality of this Camcorder when batteries from other companies are used.

1 Attach the Battery to the AC Adaptor and charge it.
2 Put the Battery on the Battery Mount by aligning the mark, and then securely plug it in.



- Since the Battery will not be charged when the DC Cable is connected to the AC Adaptor, disconnect it from the AC Adaptor.
- The [CHARGE] Lamp lights up, and charging starts.
- When the [CHARGE] Lamp goes off, charging is completed.
- When the battery is completely discharged, the [CHARGE] Lamp blinks at first, but the battery is charged normally. When the temperature of the battery is too high or low, the [CHARGE] Lamp blinks and the charging time becomes longer than usual.

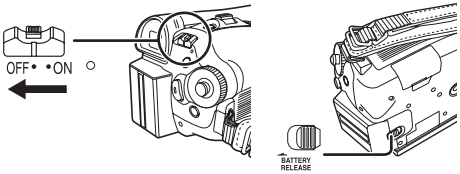
3 Attach the charged Battery to the Camcorder.



Disconnecting the Power Source

Set the [OFF/ON] Switch to [OFF], and while sliding the [BATTERY RELEASE] Switch, remove the Battery downward or DC Cable.

- When attaching or removing Battery, set the [OFF/ON] Switch to [OFF] and make sure the [STATUS] Indicator is not lit.



- Hold down the battery with your hand so it does not fall.

Notes:

- When the Camcorder has been used for a long time, the Camera body becomes warm, but this is not a malfunction.
- If the [CHARGE] Lamp does not light up although the Battery is attached to the AC Adaptor, detach the Battery and reattach it.

Charging Time and Available Recording Time

Supplied battery (PV-GS29) CGR-DU06 (7.2 V / 640 mAh)	Ⓐ	1 h 40 min.
	Ⓑ	1 h 50 min. (1 h 25 min.)
	Ⓒ	55 min. (45 min.)
Supplied battery (PV-GS39/PV-GS59 U.S.A.) CGR-DU06 (7.2 V / 640 mAh)	Ⓐ	1 h 40 min.
	Ⓑ	1 h 45 min. (1 h 20 min.)
	Ⓒ	55 min. (40 min.)
Supplied battery (PV-GS59 Canada Only) CGA-DU12 (7.2 V / 1 150 mAh)	Ⓐ	2 h 25 min.
	Ⓑ	3 h 10 min. (2 h 30 min.)
	Ⓒ	1 h 35 min. (1 h 15 min.)
Optional battery (PV-GS59 Canada Only) CGR-DU06 (7.2 V / 640 mAh)	Ⓐ	1 h 40 min.
	Ⓑ	1 h 45 min. (1 h 20 min.)
	Ⓒ	55 min. (40 min.)
Optional battery (PV-GS29) CGA-DU12 (7.2 V / 1 150 mAh)	Ⓐ	2 h 25 min.
	Ⓑ	3 h 15 min. (2 h 40 min.)
	Ⓒ	1 h 40 min. (1 h 20 min.)
Optional battery (PV-GS39/PV-GS59 U.S.A.) CGA-DU12 (7.2 V / 1 150 mAh)	Ⓐ	2 h 25 min.
	Ⓑ	3 h 10 min. (2 h 30 min.)
	Ⓒ	1 h 35 min. (1 h 15 min.)
Optional battery (PV-GS29) CGA-DU21 (7.2 V / 2 040 mAh)	Ⓐ	3 h 55 min.
	Ⓑ	5 h 45 min. (4 h 30 min.)
	Ⓒ	2 h 55 min. (2 h 15 min.)
Optional battery (PV-GS39/PV-GS59) CGA-DU21 (7.2 V / 2 040 mAh)	Ⓐ	3 h 55 min.
	Ⓑ	5 h 30 min. (4 h 15 min.)
	Ⓒ	2 h 45 min. (2 h 10 min.)

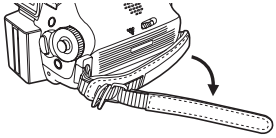
Ⓐ Charging Time
Ⓑ Maximum Continuous Recording Time
Ⓒ Intermittent Recordable Time

(The intermittent recordable time refers to recordable time when the recording and stopping operations are repeated.)

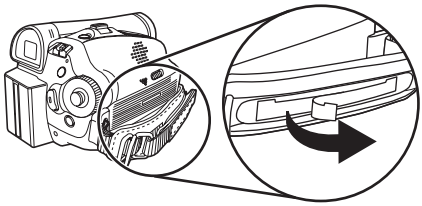
- “1 h 40 min.” indicates 1 hour and 40 minutes.
- Battery CGR-DU06 (PV-GS29/PV-GS39/PV-GS59 U.S.A.) or CGA-DU12 (PV-GS59 Canada) is supplied.
- The times shown in the table are approximate times. The numbers indicate the recording time when the Viewfinder is used. The numbers in parentheses indicate the recording time when the LCD Monitor is used. In actual use, the available recording time may be shorter.
- The times shown in the table are for continuous recording at a temperature of 25 °C (77 °F) and humidity of 60 %. If the Battery is charged at a higher or lower temperature, the charging time may be longer.
- We recommend the Battery Pack CGA-DU12 and CGA-DU21 for long time recording (2 hours or more for continuous recording, 1 hour or more for intermittent recording.)
- The available recording time becomes shorter if you use both of Viewfinder and LCD Monitor simultaneously when rotating the LCD Monitor forward to record yourself.
- The batteries heat up after use or charging. The Camcorder being used will also heat up. This is normal.
- Along with the reduction of the battery capacity, the display will change: → → → → → . If the battery discharges, then () will flash.

How to remove the Sensor tag (For U.S.A. customers)

1 **Detach the end of the Grip Belt.**



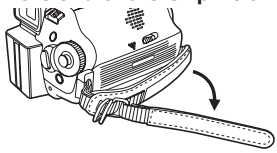
2 **Remove the Sensor tag. Then, replace the Grip Belt.**



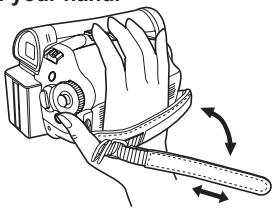
To Use as a Grip Belt

Adjust the length of the Grip Belt to the size of your hand.

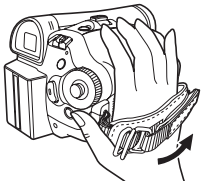
1 **Detach the end of the Grip Belt.**



2 **Adjust the length of the Grip Belt to the size of your hand.**



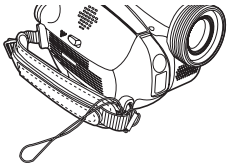
3 **Reattach the Grip Belt.**



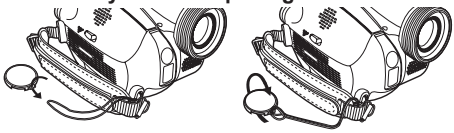
Re-attaching the Lens Cap

To protect the Lens surface, attach the Lens Cap.

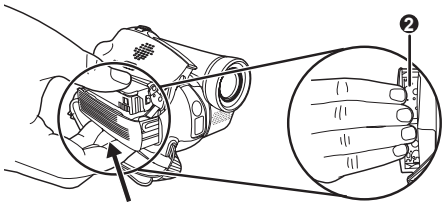
- The Lens Cap and Lens Cap Cord come preattached to the Grip Belt.



1 **Pass one end of the Lens Cap Cord through the attached eye on the Lens Cap. Then pass the Lens Cap through the loop made by itself and pull tight.**



Caution :
Before closing the Cassette Holder ❷, be sure your fingers have not been placed underneath the Cassette Holder as shown below. This may cause your fingers to jam in the cassette holder.



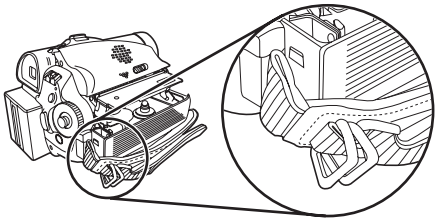
Do not place fingers here. [Bottom View]

5 Only after the Cassette Holder is completely housed, close the Cassette Compartment Cover by pressing the mark ❸.



When the Cassette Holder does not come out

- Close the Cassette Compartment Cover completely, and then open it again completely.
- Check if the battery has run down.
- Check if the Cassette Compartment Cover is in contact with grip belt as shown below. If so, be sure the grip belt stays clear of the cover when opening.



When the Cassette Holder cannot be housed

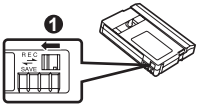
- Set the [OFF/ON] Switch to [OFF], then to [ON] again.
- Check if the battery has run down.

Notes:

- After use, be sure to rewind the cassette completely, remove it and put it in a case. Store the case in an upright position. (p. 74)
- If the indicator of the condensation does not display on the LCD screen and/or Viewfinder and you notice condensation on the lens or the main unit, do not open the cassette cover otherwise condensation may be formed on the heads or the cassette tape. (p. 73)
- When inserting a previously recorded Cassette, use the Blank Search Function (p. 31) to find the position where you want to continue recording. If you overwrite-record on a previously recorded cassette, be sure to find the position where you want to continue recording.
- If a new Cassette is inserted, rewind to the beginning of the tape before starting recording.
- When inserting the cassette, make sure it faces in the right direction and then push it in until it stops.
- When the Cassette Holder is in action, do not touch anything except the [PUSH] mark.
- Close the Cassette Compartment Cover tightly.
- When closing the Cassette Compartment Cover, do not get anything, such as a cable, caught in the cover.

Accidental Erasure Prevention

Opening the accidental erasure prevention slider ❶ on the cassette (by sliding it to the [SAVE] arrow direction) prevents recording. To enable recording, close the accidental erasure prevention slider (by sliding it to the [REC] arrow direction).



Using a Memory Card (Optional) (For PV-GS39/PV-GS59)

A Card can be used to record still pictures.

- Use a genuine SD Memory Card manufactured by Panasonic only.

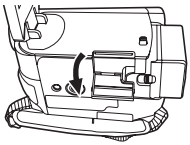
Before inserting or removing a Card, be sure to turn off the Camcorder.

- Otherwise, the Camcorder may not function properly or it may cause the loss of recorded data in a Card.

Inserting/Removing a Card

1 Turn off the Power.

2 Open the LCD Monitor and then open the Card Slot Cover.

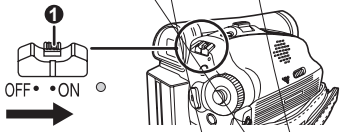


Turning on the Camcorder

Turn on the power first and then select modes.

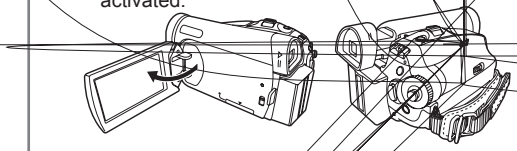
How to Turn on the Power

1 Set the [OFF/ON] Switch to [ON] while pressing the button ❶.



2 Open the LCD Monitor or extend the Viewfinder to use.

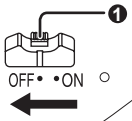
- The [STATUS] Indicator lights Red and turn on the power.
- The LCD Monitor or Viewfinder will be activated.



How to Turn off the Power

1 Set the [OFF/ON] Switch to [OFF] while pressing the button ❶.

- The [STATUS] Indicator goes off when the power turns off.
- In Tape Recording Mode or Card Recording Mode, if the [OFF/ON] Switch is set to [ON] while the LCD Monitor and Viewfinder are closed, the power turns off.



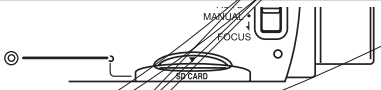
Concerning the Card

- Do not touch the terminals on the back of the card.
- Do not format the card with another Camcorder or any personal computer. This operation may make the card unusable.
- Electrical noise, static electricity, or failure of the Camcorder or the card may damage or erase the data stored on the card. We recommend saving important data on a personal computer by using a USB Cable, PC Card Adaptor, and USB Reader/Writer.

SD Memory Card

- The memory capacity indicated on the SD Memory Card label corresponds to the total amount of capacity to protect and manage the copyright and the capacity available as conventional memory for a Camcorder, personal computer or other equipment.

Card Access Lamp

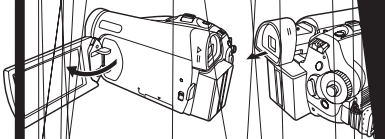


While the Camcorder is accessing the Card (reading, recording, playback or erasing), the Card Access Lamp lights up.

- While the Card Access Lamp is on, **never** attempt to open the Card Slot Cover, to pull out the Card, to turn off the Camcorder, or to turn the Mode Dial. Such actions will damage the Card, and recorded data, and cause the Camcorder to malfunction.

- The power will not turn off if the L
 closed and the Viewfinder is retrac
- The [STATUS] Indicator ❷ automa
 off and the power turns off. (If Quic
 to [ON] (p. 34), the unit goes into Q
 standby mode and the [STATUS] In
 lights Green.)
- Even if the LCD Monitor is closed or
 Viewfinder is retracted while recordin
 a tape, the power does not turn off. (
 Viewfinder stays lit up.)

**3 Open the LCD Monitor or extend t
Viewfinder again.**



- The [STATUS] Indicator lights Red and t
 the power.

Setting Date and Time

- Set to

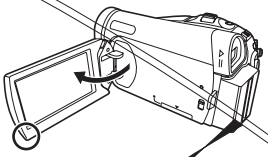
**1 Set
[YES**

Using the LCD Monitor

With the LCD Monitor open, you can also record t
picture while watching it.

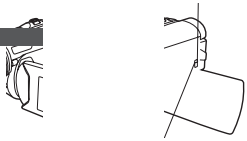
**1 Place your Thumb on the [OPEN] Knob
and pull the LCD Monitor out in the
direction of the arrow.**

- The LCD Monitor will be activated.
- It can open up to 90°.



**2 Adjus onitor angle acc
the de ing angle.**

- The l an rotate a maxim
 180°
 and a 90
 direc y rotating
 beyo es will dama
 Cam



Notes:

- In order to adjust the brightness of the Viewfinder, close the LCD Monitor, and the Viewfinder will be
- LCD Monitor is rotated by 180° towards , the brightness of the LCD Monitor cannot usted.
- e settings will not affect the images actually orded.

- The brigh or leve of the LCD can be a he Menu.
- If it is forc r rotated, the Cam may be d
- Check tha ot Cover is closed b closing th r.
- If the LCD tated by 180° toward lens and r is opened (when reco yourself), nitor and the Viewfinder simultane

Closin Monitor

Push the until it is securely locked.

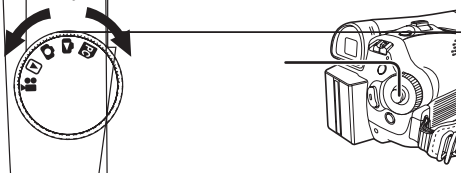
- Make s Slot Cover is closed.

Easy to Use Mode Dial

You can choose a desired mode by rotating the Mode Dial.

1 Rotate the Mode Dial.

- Set your desired mode to ❶.



Joystick Control (See below)

: **Tape Recording Mode**
Use this mode when recording pictures on a tape.

: **Tape Playback Mode**
Use this mode when playing back the recorded scene on a tape.

: **Card Recording Mode (For PV-GS39/PV-GS59)**
Use this mode when recording still pictures on a card.

: **Picture Playback Mode (For PV-GS39/PV-GS59)**
Use this mode when playing back the recorded still picture on a card.

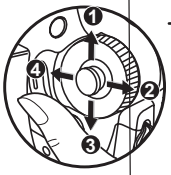
PC : **PC Mode (For PV-GS39/PV-GS59)**
Use this mode when you want to connect the Camcorder to your Personal Computer.
You can view or edit the images recorded on a card on your personal computer.

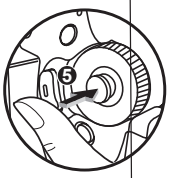
How to Use the Joystick Control

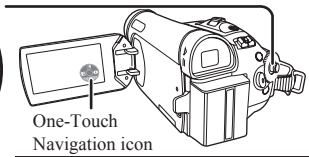
Basic Joystick Control Operations

Operations on the menu screen and selection of files to be played back on the multi-image display.

Move the Joystick Control [▲,▼,◄, or ►] to select an item or file, and then press in the center to set it.







One-Touch Navigation icon

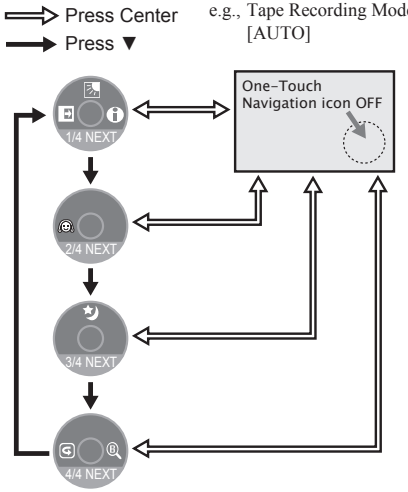
❶	Select by moving [▲].
❷	Select by moving [►].
❸	Select by moving [▼].
❹	Select by moving [◄].
❺	Push the center to select the item.

Joystick Control and Screen Display

Press the center of the Joystick Control, and the One-Touch Navigation icon will be displayed on the lower right of the screen.

- Press the Joystick Control again to turn off the One-Touch Navigation icon.
- Pressing the center button of the Joystick Control again to redisplay the One-Touch Navigation icon will display the last page used.

Each press of [▼] switches the display as follows depending on the mode.

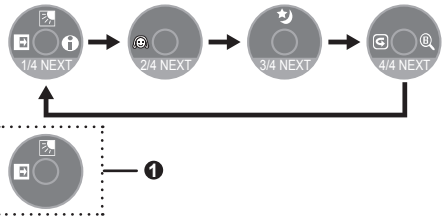


Move the Joystick Control [▲, ▼, ◄, or ►] to select an item.

- In the Tape Playback Mode or the Picture Playback Mode, the One-Touch Navigation icon will be automatically on the lower right of the screen.

Tape Recording Mode

• When the [AUTO/MANUAL/FOCUS] Switch is set to [AUTO].

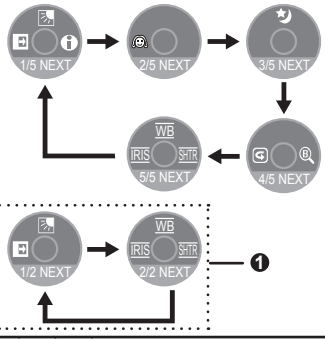


1/4	◄		Fade	p. 37
	►		Help Mode*	p. 25
	▲		Backlight compensation	p. 37
	▼		Go to next page.	–
2/4	◄		Soft Skin Mode	p. 38
	▼		Go to next page.	–
3/4	▲		MagicPix Mode	p. 38
	▼		Go to next page.	–
4/4	◄		Recording Check	p. 31
	►		Blank Search Mode	p. 31
	▼		Go to next page.	–

• ❶ is displayed while recording on a tape.

Tape Recording Mode

• When the [AUTO/MANUAL/FOCUS] Switch is set to [MANUAL].

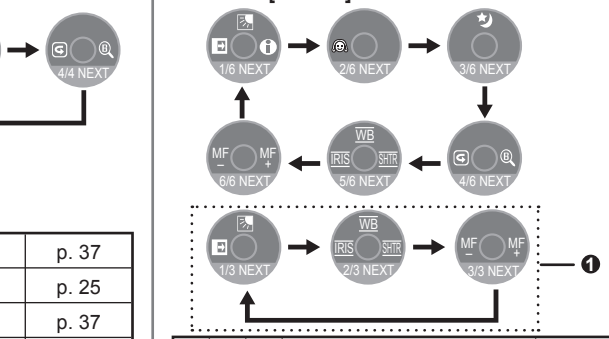


5/5	◄	IRIS	Manual Iris Adjustment Mode	p. 43
	►	SHTR	Manual Shutter Speed Adjustment Mode	pp. 42~43
	▲	WB	Manual White Balance Adjustment Mode	pp. 41~42
	▼		Go to next page.	–

• ❶ is displayed while recording on a tape.

Tape Recording Mode

• When the [AUTO/MANUAL/FOCUS] Switch is set to [FOCUS].

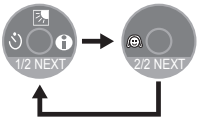


6/6	◄	MF	Manual Focus Adjustment Mode	p. 44
	►	MF	Manual Focus Adjustment Mode	p. 44
	▼		Go to next page.	–

• ❶ is displayed while recording on a tape.

Card Recording Mode (For PV-GS39/PV-GS59)

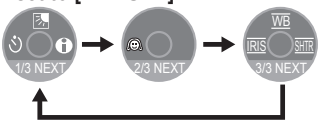
• When the [AUTO/MANUAL/FOCUS] Switch is set to [AUTO].



1/2	◄		Self-timer Mode	p. 35
	►		Help Mode*	p. 25
	▲		Backlight compensation	p. 37
	▼		Go to next page.	–
2/2	◄		Soft Skin Mode	p. 38
	▼		Go to next page.	–

Card Recording Mode (For PV-GS39/PV-GS59)

• When the [AUTO/MANUAL/FOCUS] Switch is set to [MANUAL].



3/3	◄	IRIS	Manual Iris Adjustment Mode	p. 43
	►	SHTR	Manual Shutter Speed Adjustment Mode	pp. 42~43
	▲	WB	Manual White Balance Adjustment Mode	pp. 41~42
	▼		Go to next page.	–

Card Recording Mode (For PV-GS39/PV-GS59)

- **When the [AUTO/MANUAL/FOCUS] Switch is set to [FOCUS].**



4/4	◄	MF −	Manual Focus Adjustment Mode	p. 44
	►	MF +	Manual Focus Adjustment Mode	p. 44
	▼		Go to next page.	–

Tape Playback Mode



–	▲	►/II	Playback / Pause	p. 45
	►	►►	Fast (Cue Playback)	p. 46
	◄	◄◄	Rewind (Review Playback)	p. 46
	▼	■	Stop	p. 45

Picture Playback Mode (For PV-GS39/PV-GS59)



–	▲	►/II	Start the Slide Show Stop the Slide Show	pp. 47~48
	►	II►	Playback the next picture	p. 47
	◄	◄II	Playback the previous picture	p. 47
	▼		Erase the picture	p. 49

*Help Mode

- **Set to Tape/Card Recording Mode.**

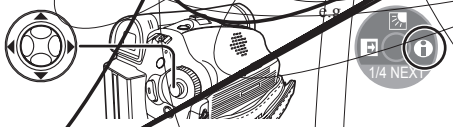
You can view function help information using One-Touch Navigation.

1 **Press the Joystick Control to display the One-Touch Navigation icon on the lower right of the screen.**

2 **Move the Joystick Control [▼] until the page with [] indication is displayed.**

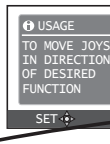
[One-Touch Navigation icon]

e.g.



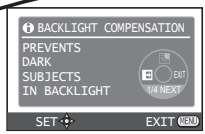
3 **Move the Joystick Control [►] to select [].**

e.g.



4 **Move the Joystick Control [▲▼◄►] to select the desired function.**

e.g.



- An explanation of the selected icon is displayed on the screen.
- Each time the Joystick Control is moved down, the indication changes.

To end the Help Mode

Move the Joystick Control [►] to select [EXIT] or press the [MENU] Button.

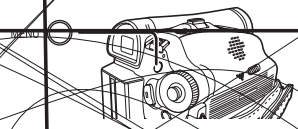
Notes:

- When the Help Mode is used, functions cannot be set.
- The Help Mode only displays the information available in [AUTO] Mode.

Using the Menu Screen

To facilitate the selection of a desired function or setup, this Camcorder displays various function setups on Menus.

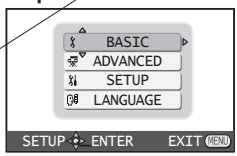
1 **Press the [MENU] Button.**



- The Menu corresponding to the Mode selected by the Mode Dial is displayed.
- Do not switch the Mode Dial when the Menu is displayed.

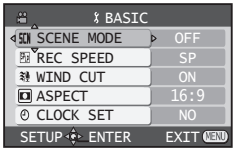


2 **Move the Joystick Control [▲] or [▼] to select the top menu.**



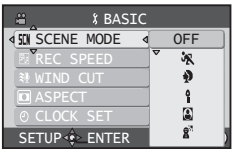
3 **Move the Joystick Control [►] or press it to set the selection.**

4 **Move the Joystick Control [▲] or [▼] to select the Sub-Menu.**



5 **Move the Joystick Control [►] or press it to set the selection.**

6 **Move the Joystick Control [▲] or [▼] to select the item to be set.**



7 **Press the Joystick Control to determine the setting.**

- While a Menu is displayed, you cannot record or play back. Menus can be displayed during playback but not during recording.

To Return to the Previous Screen
Move the Joystick Control [◄].

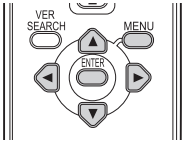
To Exit the Menu Screen
Press the [MENU] Button again.

About the Menu Mode Setting
The setting selected on the Menu will be retained even when the Camcorder is turned off. However, if the Battery or AC Adaptor is disconnected before turning off the Camcorder, the selected setup may not be retained.

- Menu operation flow is shown in this text by >>.

Operating with Remote Control (PV-GS59 Only : Optional)

The menu screen transition is the same as when the buttons on the main unit are used.



1 **Press the [MENU] Button.**

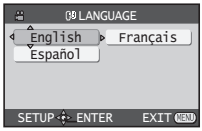
2 **Select a menu item.**
- Use the Select Button (▲▼◄►) and [ENTER] Button in place of the Joystick Control on the main unit.

3 **Press the [MENU] Button to exit the menu screen.**

Selecting Language

You can select the desired language.

1 **Set [LANGUAGE] >> [English], [Français] or [Español].**

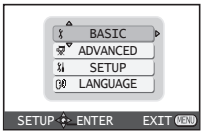


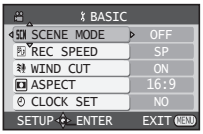
List of Menus

The figures of the Menus are for explanation purposes only, and they are different from the actual Menus.

[TAPE RECORDING MENU]

e.g.,





[BASIC]
Basic Setup Sub-Menu
- **[SCENE MODE]**
 Scene Mode (p. 40)
- **[REC SPEED]**
 Recording Speed Mode (p. 29)
- **[WIND CUT]**
 Wind Noise Reduction (p. 39)
- **[ASPECT] (For PV-GS39/PV-GS59)**
 Wide Screen Mode (p. 39)
- **[CINEMA] (For PV-GS29)**
 Cinema-like Format Recording (p. 39)
- **[CLOCK SET]**
 Date and Time Setting (p. 21)

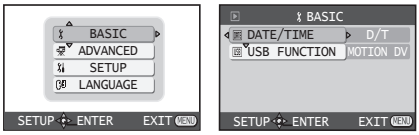
[ADVANCED]
Advance Setup Sub-Menu
[PICT.QUALITY] (For PV-GS39/PV-GS59)
Picture Quality (p. 32)
[EIS]
Image Stabilizer (p. 36)
[FADE COLOR]
Fade color (p. 37)
[AUDIO REC]
Audio Recording Mode (p. 28)
[USB FUNCTION] (PV-GS59 Only)
USB Functions Mode (pp. 61, 67)
[D.ZOOM]
Digital Zoom (p. 36)
[ZOOM MIC]
Zoom Microphone (p. 35)
[SHTR EFFECT] (PV-GS29 Only)
Shutter effect (p. 31)

[SETUP]
Setup Sub-Menu
[DISPLAY]
Display Mode (p. 28)
[DATE/TIME]
Date and Time Indication (pp. 28, 70)
[POWER SAVE]
Power Save Mode (p. 29)
[QUICK START]
Quick Start Mode (p. 34)
[REMOTE] (PV-GS59 Only)
Remote Control Mode (p. 15)
[BEEP SOUND]
Beep Sound (p. 28)
[LCD SET]
LCD Adjustment (p. 22)
[EVF SET]
Viewfinder Adjustment (p. 22)
[INITIAL SET]
Initial Setting Mode (p. 29)
[DEMO MODE]
Demonstration Mode (p. 29)

[LANGUAGE]
Language Setup Sub-menu (p. 26)

[TAPE PLAYBACK MENU]

e.g.,



[BASIC]
Basic Setup Sub-Menu
[DATE/TIME]
Date and Time Indication (pp. 28, 70)
[USB FUNCTION] (PV-GS59 Only)
USB Functions Mode (pp. 61, 67)

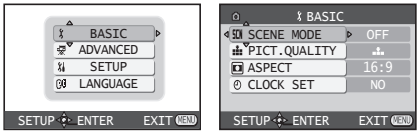
[ADVANCED]
Advance Setup Sub-Menu
[REC SPEED]
Recording Speed Mode (p. 29)
[REC STDBY]
Recording Standby Mode (p. 54)
[PICT.QUALITY] (For PV-GS39/PV-GS59)
Picture Quality (p. 32)
[REPEAT PLAY]
Repeat Play Mode (p. 45)

[SETUP]
Setup Sub-Menu
[12bit AUDIO]
Audio Selector (p. 45)
[AUDIO OUT]
Audio Output Mode (p. 29)
[DISPLAY]
Display Mode (p. 28)
[REMOTE] (PV-GS59 Only)
Remote Control Mode (p. 15)
[LCD SET]
LCD Adjustment (p. 22)
[EVF SET]
Viewfinder Adjustment (p. 22)
[POWER SAVE]
Power Save Mode (p. 29)
[TV ASPECT] (For PV-GS39/PV-GS59)
TV Aspect Mode (p. 51)

[LANGUAGE]
Language Setup Sub-menu (p. 26)

[CARD RECORDING MENU] (For PV-GS39/PV-GS59)

e.g.,



[BASIC]
Basic Setup Sub-Menu
[SCENE MODE]
Scene Mode (p. 40)
[PICT.QUALITY]
Picture Quality (p. 32)
[ASPECT]
Wide Screen Mode (p. 39)
[CLOCK SET]
Date and Time Setting (p. 21)

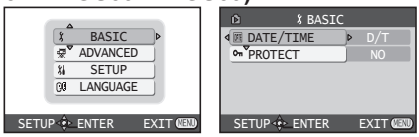
[ADVANCED]
Advance Setup Sub-Menu
[BURST MODE]
RapidFire Consecutive Photoshot (p. 33)
[SHTR EFFECT]
Shutter Effect (p. 32)

[SETUP]
Setup Sub-Menu
[DISPLAY]
Display Mode (p. 28)
[DATE/TIME]
Date and Time Indication (pp. 28, 70)
[POWER SAVE]
Power Save Mode (p. 29)
[QUICK START]
Quick Start Mode (p. 34)
[REMOTE] (PV-GS59 Only)
Remote Control Mode (p. 15)
[BEEP SOUND]
Beep Sound (p. 28)
[LCD SET]
LCD Adjustment (p. 22)
[EVF SET]
Viewfinder Adjustment (p. 22)
[INITIAL SET]
Initial Setting Mode (p. 29)

[LANGUAGE]
Language Setup Sub-menu (p. 26)

[PICTURE PLAYBACK MENU] (For PV-GS39/PV-GS59)

e.g.,



[BASIC]
Basic Setup Sub-Menu
[DATE/TIME]
Date and Time Indication (pp. 28, 70)
[PROTECT]
Setting the Lock (p. 50)

[ADVANCED]
Advance Setup Sub-Menu
[DPOF SET]
Setting DPOF (p. 50)
[FORMAT CARD]
Formatting a Card (p. 51)

[SETUP]
Setup Sub-Menu
[DISPLAY]
Display Mode (p. 28)
[REMOTE] (PV-GS59 Only)
Remote Control Mode (p. 15)
[LCD SET]
LCD Adjustment (p. 22)
[EVF SET]
Viewfinder Adjustment (p. 22)
[POWER SAVE]
Power Save Mode (p. 29)
[TV ASPECT]
TV Aspect Mode (p. 51)

[LANGUAGE]
Language Setup Sub-menu (p. 26)

Menus Related to Taking Pictures

DATE/TIME
This switches between date and time indications.
Set [BASIC] or [SETUP] >> [DATE/TIME] >> [D/T], [DATE] or [OFF].
- The Camcorder automatically records the date and time of picture taking on the tape.
- You can also show or change the Date/Time Indication by repeatedly pressing the [DATE/TIME] Button on the Remote Control (PV-GS59 Only).

DISPLAY
Set [SETUP] >> [DISPLAY] >> [ON] or [OFF].
Set to [ON] and the display mode can be switched to all functions. Set to [OFF] and it can be switched to minimum display.

AUDIO REC
- **Set to Tape Recording Mode.**

You can select the sound quality of the recorded sound.
Set [ADVANCED] >> [AUDIO REC] >> [12bit] or [16bit].
[12bit]: Records audio in “12 bit 32 kHz 4 tracks”. (The original audio signals can be kept after the other audio signals are dubbed.)
[16bit]: Records audio in “16 bit 48 kHz 2 tracks”. Audio can be recorded in higher quality. (If audio signals are dubbed, then the original audio signals will be erased.)

BEEP SOUND
- **Set to Tape/Card Recording Mode.**

When [BEEP SOUND] on the [SETUP] is set to [ON], confirmation/alarm beeps are issued as follows.
1 Beep
- When you start recording
- When you turn on the power
- When the unit goes from Quick Start standby mode to recording pause

2 Beeps
- When you pause recording
- When you turn off the power
- When the unit goes into Quick Start standby mode

2 Beeps 4 times
- When a cassette with its erasure prevention tab set to [SAVE] is inserted, condensation occurs (p. 73), and at other times. Check the sentence displayed on the screen (p. 71).

POWER SAVE

Set [SETUP] >> [POWER SAVE] >> [5 MINUTES] or [OFF].

[OFF]:

When about 5 minutes passed without any operation, the standby mode automatically will be set. In the standby mode, [] blinks and it takes time more than usual to start recording after you press the Recording Start/Stop Button.

[5 MINUTES]:

When about 5 minutes passed without any operation, the Camcorder automatically turns off to protect the tape or to prevent the battery from running down. When you use the Camcorder, turn it on again.

- In the following cases, the power may not turn off even when set [POWER SAVE] >> [5 MINUTES].
 - When connecting to the AC Jack (When using the AC Adaptor)
 - When connecting the USB Cable or the DV Cable to a PC or other equipment
 - When the PC Mode (For PV-GS39/PV-GS59)

Menus Related to Playback

AUDIO OUT

This switches the sound to be played back.

Set [SETUP] >> [AUDIO OUT] >> [STEREO], [L] or [R].

[STEREO]:	Stereo sound (main sound and sub sound)
[L]:	Left channel sound (main sound)
[R]:	Right channel sound (sub sound)

Other Menus

INITIAL SET

- **Set to Tape/Card Recording Mode.**

Set [SETUP] >> [INITIAL SET] >> [YES] or [NO].

Set to [YES] to change menu settings back to their factory default condition.

- The initializing takes a little while.
- Language setting cannot be back to the initial shipping condition.

DEMO MODE

- **Set to Tape Recording Mode.**

If you set [SETUP] >> [DEMO MODE] >> [ON] without inserting a cassette or a card, the Camcorder is automatically set to the demonstration mode for introducing its functions. If any button is pressed or operated, the demonstration mode is canceled. If no operations take place for approx. 10 minutes, the demonstration mode automatically starts.

To terminate the demonstration mode, insert a cassette or a card, or set to [DEMO MODE] >> [OFF]. For normal use, set this function to [OFF].

LP Mode

You can switch the tape recording speed.

- **Set to Tape Recording/Playback Mode.**

1 Set [BASIC] or [ADVANCED] >> [REC SPEED] >> [LP].

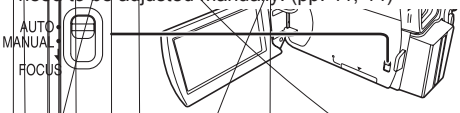
If the LP mode is selected, the recording time will be 1.5 times the SP mode, but some functions will be disabled.

- We recommend using the SP mode for important recordings.
- In order to fully exhibit the performances of the LP mode, we recommend using Panasonic cassettes marked LP mode.
- Audio dubbing is not possible with LP Mode. (p. 53)
- In the LP mode, the picture quality will not be degraded in comparison with the SP mode, but mosaic noise may appear on the playback image or some functions may be disabled.
 - Playback on other digital video equipment or on digital video equipment without the LP mode.
 - Playback of the image on other digital video equipment recorded in the LP mode.
 - Slow Motion/Still Advance playback.

Recording Mode

About Recording

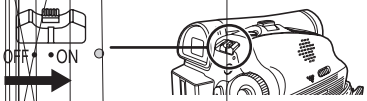
- When recording pictures on a tape, set the Mode Dial to Tape Recording Mode [📹].
- When recording still pictures on a card, set the Mode Dial to Card Recording Mode [📷] (For PV-GS39/PV-GS59).
- When recording with the [AUTO/MANUAL/FOCUS] Switch set to [AUTO], the Camcorder automatically adjusts the Focus and White Balance. In some cases, they cannot be adjusted automatically and need to be adjusted manually. (pp. 41, 44)



- **Before turning on the power, remove the Lens Cap. If the Lens Cap is still attached when the power is turned on, Automatic White Balance Adjustment (p. 41) may not function correctly.**

Recording on a Tape

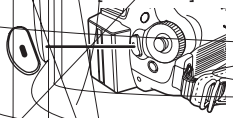
1 **Set the [OFF/ON] Switch to [ON].**
- The [STATUS] Indicator lights Red.



2 **Set the Mode Dial to Tape Recording Mode.**
- The [📹 TAPE RECORDING MODE] is displayed on the screen.



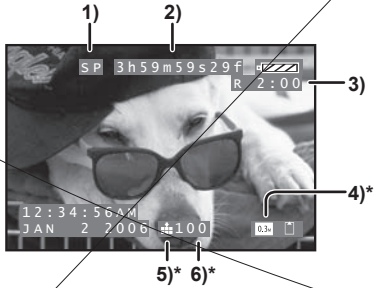
3 **Press the Recording Start/Stop Button.**
- Recording starts.
- The [RECORD] and [●] Indication appears.



4 **Press the Recording Start/Stop Button again to pause the recording.**
- The [PAUSE] and [❚❚] Indication appears.

- For the recording time on a tape, refer to page 16.
- Carry out a recording check (p. 31) to verify that the image is recorded properly.
- In order to find the unrecorded section, carry out the blank search (p. 31).

On-screen Display in the Tape Recording Mode



* These indications are displayed only when the card is inserted. (For PV-GS39/PV-GS59)

1) Recording mode
2) Recording time elapse
3) Remaining tape indication
4) Still picture size
5) Quality of still pictures
6) Number of recordable still pictures (When no picture can be recorded, this indication will flash in red.)

Concerning the remaining tape time indication on the screen

- The remaining tape time is indicated in minutes. (When it reaches less than 3 minutes, the indication starts flashing.)
- During a 15-second or shorter recording, the remaining tape time indication may not be displayed or the remaining tape time may not be displayed correctly.
- In some cases, the remaining tape time indication may display remaining tape time that is 2 to 3 minutes shorter than the actual remaining tape time.

heck the Recording

play back the last few seconds of the scene in the Recording Pause Mode.
Tape Recording Mode.

ss the Joystick Control to display the -Touch Navigation icon on the lower t of the screen.

e the Joystick Control [▼] until the e with [⟲] indication is displayed.



e the Joystick Control [◀] to select .

e [RECORDING CHECK STARTED] and [⟲] indication is displayed. After checking, Camcorder resumes the Recording Pause



- Approximately 1 second before the last recorded scene, the Camcorder switches to the Recording Pause Mode or the Still Playback Mode.
- If there is no blank left on the Cassette, the Camcorder stops at the end of the tape.

To Cancel the Blank Search Functio Before Completion

Move the Joystick Control [▼] to select [

ing Mode

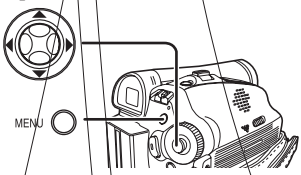
	520
	7 04
	1
own i	

Notes:
- Even if the [SHTR EFFECT] is set to [ON], the Shutter Effect cannot be recorded on the picture.
- When the color of the screen changes or blurs, adjust the shutter speed manually to 1/60 or 1/100.
- Photoshot Recording results in slightly inferior image quality.
- For the number of still pictures to be recorded on a card, refer to page 32.
- The sound cannot be recorded.
- While data is being recorded on a card, do not operate the Mode Dial.
- When the Access Lamp is lit, do not insert or remove a card.
- Another product may degrade or not play back data recorded on this Camcorder.
- If set [PICT. QUALITY] >> [], mosaic-pattern noise may appear on a playback image depending on the picture content.

RapidFire Consecutive Photoshot

The still pictures can be recorded on a Card at regular intervals.

1 Set [ADVANCED] >> [BURST MODE] >> [ON].



- The [] Indication appears.



2 Press and hold the [PHOTO SHOT] Button.



- When [ON] is selected, the still pictures can be recorded in approximately 0.5 second intervals until the [PHOTO SHOT] Button is released or 10 pictures are recorded.

To Stop the RapidFire Consecutive Photoshot in Progress

Release the [PHOTO SHOT] Button.

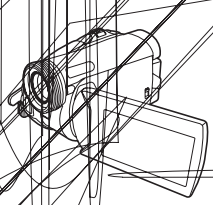
Notes:
- One more still picture may be recorded after you release the [PHOTO SHOT] Button.
- If the Self-timer Function is set, the Camcorder records up to 10 still pictures continuously.
- Intervals between recording pictures may become longer depending on the card. We recommend using a Panasonic SD Memory Card.
- When using the card formatted by other equipment or a card that was recorded and erased repeatedly, the intervals between recording pictures may become longer. If so, back up your important data on a PC, and format your card with this Camcorder.

Recording Yourself

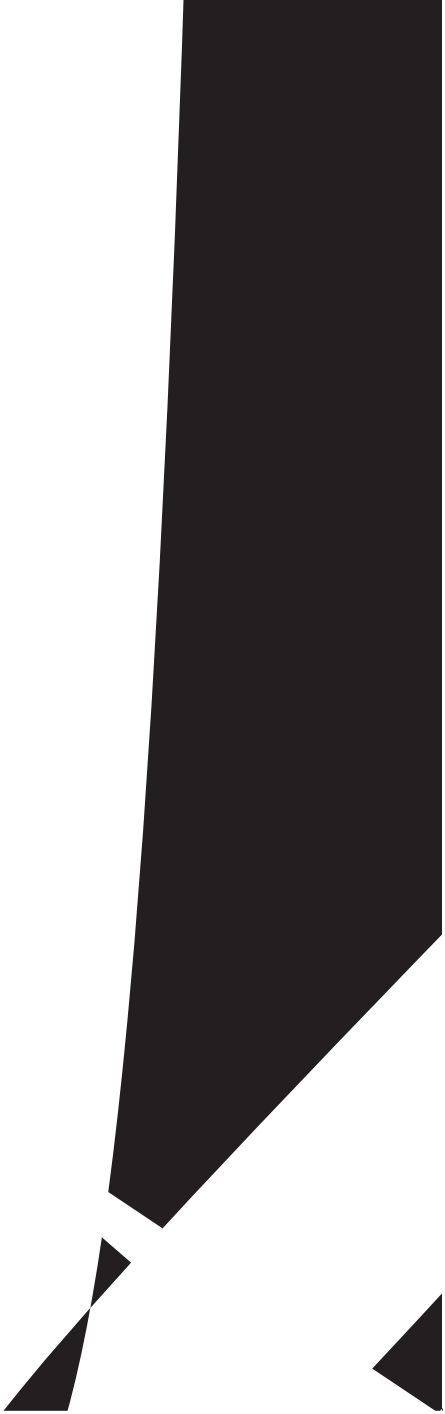
You can record yourself while viewing the LCD Monitor. You can record persons in front of the camera while presenting them the image. The image is horizontally flipped as if you see a mirror image. (The image to be recorded is the same as that recording.)
- Extend the Viewfinder to see the picture while recording.

• Set to Tape/Card Recording Mode.

1 Rotate the LCD Monitor towards the lens side.



- A vertically oriented display appears on the Viewfinder screen, this is normal and not indicative of any trouble.
- When the LCD Monitor is rotated towards the lens side, the One-Touch Navigation icon will not be displayed even if you press the center of the Joystick Control.



Self-timer Recording (For PV-GS39/PV-GS59)

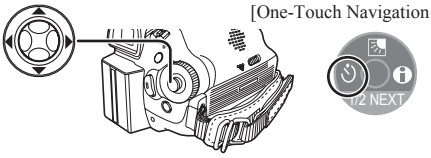
When you set the self-timer, the recording starts automatically after 10 seconds on the Card.

• Set to Card Recording Mode.

1 Press the Joystick Control to display the One-Touch Navigation icon on the lower right of the screen.

2 Move the Joystick Control [▼] until the page with [] indication is displayed.

[One-Touch Navigation icon]



3 Move the Joystick Control [◄] to select [].

- The [SELF-TIMER ON] and the [] Indication appears.

4 Press the [PHOTO SHOT] Button.



- The [] Indication flashes and the recording starts after 10 seconds. After recording, the Self-Timer will be canceled.

To Stop the Self-timer in Progress

Press the [MENU] Button.

To Cancel the Self-timer

Move the Joystick Control [◄] to select [] again.

- The [SELF-TIMER OFF] is displayed.

Notes:

- When [BEEP SOUND] on the [SETUP] Sub-Menu is set to [ON], the beep sound will be emitted along with the Recording Lamp flashing in the Self-timer Standby Mode.
- By operating the [OFF/ON] Switch or Mode Dial, the Self-timer Standby Mode is canceled.
- If the RapidFire Consecutive Photoshot is set, the maximum recordable pictures (max. 10 pictures) are recorded. (p. 33)

Zoom In/Out Functions

This feature gives special effects to the picture by recording objects close by or with wide-angle shot. You can zoom in up to 30× optically.

• Set to Tape/Card Recording Mode.

1 For wide-angle shots (zoom out) : Push the [W/T] Lever towards [W]. For close-ups (zoom in) : Push the [W/T] Lever towards [T].



- Zoom Magnification Indication is displayed for a few seconds.



Notes:

- When zooming in and taking a picture while holding the Camcorder by hand, we recommend using the image stabilizer function.
- When you are zooming in on a faraway subject, a sharper focus is achieved if the recording subject is 4.3 feet (1.3 meters) or further from the Camcorder.
- When the zoom speed is high, the subject may not be focused easily.
- When the zoom magnification is 1×, the Camcorder can focus on a subject approx. 0.8 inches (20 mm) away from the lens.

To Use the Zoom Microphone Function

Along with the zooming operation, the microphone's directional angle and sensitivity are varied for recording sounds.

• Set to Tape Recording Mode.

1 Set [ADVANCED] >> [ZOOM MIC] >> [ON].

- The [] Indication is displayed.



To Cancel the Zoom Microphone Function

Set [ADVANCED] >> [ZOOM MIC] >> [OFF].

Note:

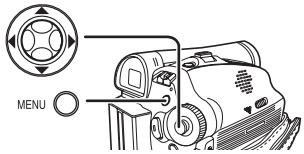
- The Zoom Microphone Function may not work effectively if the surrounding noise is too loud.

Digital Zoom Function

This function is useful when you want to record close-up shots of subjects located beyond a normal zoom range of 1× to 30× magnification. With the Digital Zoom Function, you can select a magnification from 50× up to 1000×.

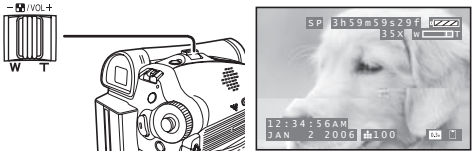
- **Set to Tape Recording Mode.**

1 Set [ADVANCED] >> [D.ZOOM] >> [50×] or [1000×].



OFF	Optical zoom only (Up to 30×)
50×	Digital zooming to 50×
1000×	Digital zooming to 1000×

2 Push the [W/T] Lever towards [W] or towards [T] to zoom in or out.



To Cancel the Digital Zoom Function

Set [ADVANCED] >> [D.ZOOM] >> [OFF].

Notes:

- The larger the digital zoom magnification, the more the image quality is degraded.
- When the Card Recording mode is used, the Digital Zoom Function cannot be used.
- White Balance cannot be set in the Digital Zoom range.

About the Variable Speed Zoom Function

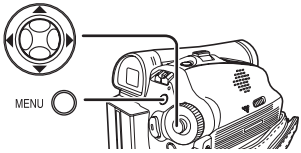
- When pushing the [W/T] Lever as far as it will go, you can zoom from 1× to 30× in 3.3 seconds at the maximum in the Recording Mode.
- The zoom speed varies according to the amount of movement of the [W/T] Lever.
- The Variable Speed Zoom Function cannot be used with the Remote Control. (PV-GS59 Only)

Image Stabilizer Function

If the Camcorder is shaken while recording, the camera shake in the image can be corrected.

- If the Camcorder shakes too much, the images may not be stabilized.
- **Set to Tape Recording Mode.**

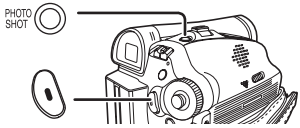
1 Set [ADVANCED] >> [EIS] >> [ON].



- The [EIS] Indication appears.



2 Press the Recording Start/Stop Button or [PHOTO SHOT] Button to start recording.



To Cancel the Image Stabilizer Function

Set [ADVANCED] >> [EIS] >> [OFF].

Notes:

- When the MagicPix Function is used, the image stabilizer function does not work. If so, the [EIS] indication flashes.
- When the Gain Up mode is set to ON, the image stabilizer function does not work. If so, the [EIS] indication flashes.
- Under fluorescent lighting, image brightness may change or colors may not look natural.
- After-images may appear.
- When a tripod is used, we recommend that you turn the Image Stabilizer off.
- In the following cases, the Image Stabilizer Function may not work effectively.
 - When the digital zoom is used
 - When a conversion lens is used
 - When recording is done in an extremely dark place
 - When the Camcorder is shaken greatly
 - When you record a moving subject while tracking it

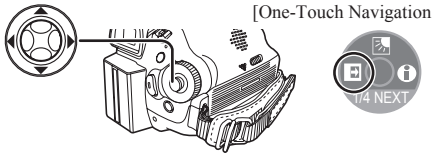
Fade In/Out Functions

- **Fade In :**
 The image and audio gradually appear.
- **Fade Out :**
 The image and audio gradually disappear.
- **Set to Tape Recording Mode.**

1 Press the Joystick Control to display the One-Touch Navigation icon on the lower right of the screen.

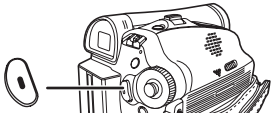
2 Move the Joystick Control [▼] until the page with [] indication is displayed.

[One-Touch Navigation icon]



3 Move the Joystick Control [◄] to select [].
- The [FADE ON] is displayed.
- The [W] or [B] Indication flashes and then is displayed.

4 Press the Recording Start/Stop Button.



Start recording. (Fade in)
• The [RECORD (NOW FADING)] is displayed.
When you start recording, the image/audio disappeared completely and the image/audio gradually appears.



Pause recording. (Fade out)
• The [PAUSE (NOW FADING)] is displayed.
The image/audio gradually disappears. After the image/audio completely disappears, recording stops.



To Cancel Fading

Move the Joystick Control [◄] to select [] again.
- The [FADE OFF] is displayed.

To Select the Color For Fade in/out

The color which appears in fading pictures can be selected.

1 Set [ADVANCED] >> [FADE COLOR] >> [BLACK] or [WHITE].

Note:
- While the Fade in/Fade out function is selected, it takes several seconds to display the image when you start recording images. Besides, it also takes several seconds to pause recording.

Backlight Compensation Function

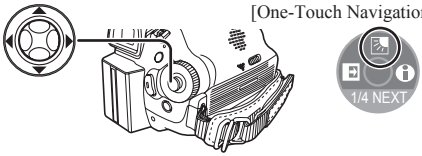
This prevents the subject from being recorded too darkly when backlit. (Backlight is the light that shines from behind the subject being recorded.)

- **Set to Tape/Card Recording Mode.**

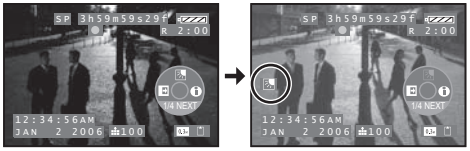
1 Press the Joystick Control to display the One-Touch Navigation icon on the lower right of the screen.

2 Move the Joystick Control [▼] until the page with [] indication is displayed.

[One-Touch Navigation icon]



3 Move the Joystick Control [▲] to select [].
- The [BACKLIGHT COMPENSATION ON] is displayed. The [] Indication flashes and then is displayed.
- The entire screen becomes brighter.



To Resume Normal Recording

Move the Joystick Control [▲] to select [] again.
- The [BACKLIGHT COMPENSATION OFF] is displayed.

Notes:
- When setting the Iris manually, the Backlight Compensation Function does not work.
- If you operate the [OFF/ON] Switch or Mode Dial, the Backlight Compensation Function is canceled.

MagicPix Function

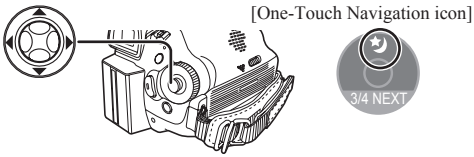
This function allows you to record color images brightly in a dark place without using the Video Light.

• Set to Tape Recording Mode.

1 Press the Joystick Control to display the One-Touch Navigation icon on the lower right of the screen.

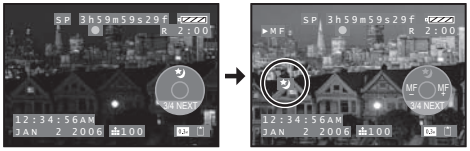
2 Move the Joystick Control [▼] until the page with [] indication is displayed.

[One-Touch Navigation icon]



3 Move the Joystick Control [▲] to select [].

• The [MAGICPIX ON] is displayed. The [] Indication flashes and then is displayed.



4 Move the Joystick Control [◄] or [►] to adjust.

To Cancel the MagicPix Function

Move the Joystick Control [▲] to select [] again.

• The [MAGICPIX OFF] is displayed.

Notes:

- If set in a bright place, the screen may become whitish for a while.
- The MagicPix Function is canceled when you operate the [OFF/ON] Switch or the Mode Dial.
- In a dark place, the recorded picture is presented in a time-lapse-like manner.
- Adjust the Focus manually.
- White Balance cannot be set.
- The Shutter Speed cannot be adjusted.
- The Scene Mode cannot be set.
- When recording with the MagicPix Function, it is recommended that you use a tripod.
- The MagicPix Function makes the signal charging time of CCD longer up to approx. 30× longer than usual, so that dark scenes that are invisible to the naked eyes can be recorded brightly. For this reason, bright dots may be seen, but this is not a malfunction.
- The Image Stabilizer Function does not work. In this case, the [EIS] Indication flashes.
- The Backlight Compensation Function cannot be changed.

Soft-Skin Mode

This enables you to record skin colors in a softer tone. In order to get the best result, avoid background colors similar to the skin color of the subject. Otherwise, this may result in a softer background lacking in detail.

• Set to Tape/Card Recording Mode.

1 Press the Joystick Control to display the One-Touch Navigation icon on the lower right of the screen.

2 Move the Joystick Control [▼] until the page with [] indication is displayed.



3 Move the Joystick Control [◄] to select [].

• The [SOFT SKIN MODE ON] is displayed. The [] Indication flashes and then is displayed.

• To obtain the best effect, we recommend framing the subject as shown above in the picture.

To Cancel the Soft-Skin Mode

Move the Joystick Control [◄] to select [] again.

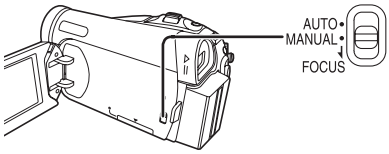
• The [SOFT SKIN MODE OFF] is displayed.

Recording in Special Situations (Scene Mode)

You can select optimal scene mode under specific recording situations.

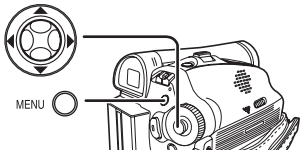
• Set to Tape/Card Recording Mode.

1 Set the [AUTO/MANUAL/FOCUS] Switch to [MANUAL].



- The [MNL] Indication and the One-Touch Navigation icon appears.

2 Set [BASIC] >> [SCENE MODE] >> a desired mode ([], [], [], [] or []).



- The Indication of the selected Mode appears.

1) 

2) 

3) 

4) 

5) 

1) [] Sports Mode
- For recording scenes involving quick movements, such as sports scenes.

2) [] Portrait Mode
- Use when you want to make people (subjects) stand out from the background.

3) [] Low Light Mode
- To make the scene brighter in dark conditions.

4) [] Spotlight Mode
- To make the subject under a spotlight look more attractive.

5) [] Surf & Snow Mode
- To record images in bright places such as ski slopes and beaches.

To Cancel the Scene Mode

Set [BASIC] >> [SCENE MODE] >> [OFF].
Or, set the [AUTO/MANUAL/FOCUS] Switch to [AUTO].

Notes:
- If any of the Scene Modes are selected, you cannot adjust the shutter speed (p. 42) or iris (p. 43).
- Using the MagicPix Function cancels any of the Scene Modes.
- Using the Light Function cancels any of the Scene Modes.

Sports Mode
- For slow motion playback (PV-GS59 Only) or playback pause of recorded pictures, this mode reduces camera shakes.
- During normal playback, the image movement may not look smooth.
- Avoid recording under fluorescent light, mercury light or sodium light because the color and brightness of the playback image may change.
- If you record a subject illuminated with strong light or a highly reflective subject, vertical lines of light may appear.
- If the light is insufficient, the Sports Mode does not function. The [] Indication flashes.
- If this mode is used indoors, the screen may flicker.

Sports Mode/Portrait Mode
- If you record a still picture in Progressive Photoshot Mode, the brightness and hue of the recorded still picture may become unstable.
- If this mode is used for indoors, the screen may flicker. If so, change the [SCENE MODE] setting to [OFF].

Low Light Mode
- Extremely dark scenes may not be able to be recorded with detail.

Spotlight Mode
- If the subject is extremely bright, the recorded image may become whitish and the periphery of the recorded image extremely dark.

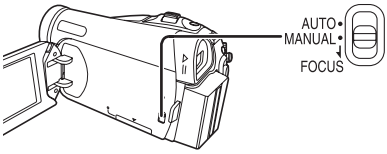
Surf & Snow Mode
- If the recording subject is extremely bright, the recorded image may become whitish.

Recording in Natural Colors (White Balance)

Depending on the scene or lighting conditions, the Automatic White Balance Adjustment Mode may not be able to bring out natural colors. In this case, the white balance can be adjusted manually.
When the Camcorder is turned on with the Lens Cap on, the Automatic White Balance Adjustment may not function properly. Please turn on the Camcorder after removing the Lens Cap.

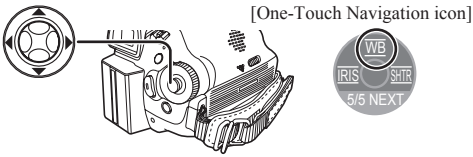
• Set to Tape/Card Recording Mode.

1 Set the [AUTO/MANUAL/FOCUS] Switch to [MANUAL].



- The [MNL] Indication and the One-Touch Navigation icon appears.

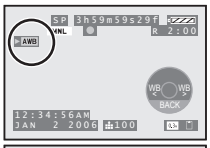
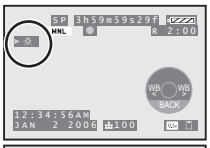
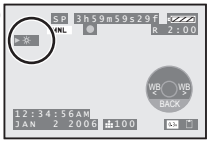
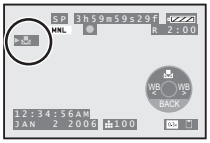
2 Move the Joystick Control [▲] to select [WB].



- The White Balance indication appears. ([AWB] etc.)



3 Move the Joystick Control [◄] or [►] to select a desired White Balance Mode.

1) 
2) 
3) 
4) 

1) Automatic White Balance Adjustment [AWB]
2) Indoor Mode (recording under incandescent lamp) [☆]
3) Outdoor Mode [☼]
4) The white balance setting that was previously set manually []

To Resume Automatic Adjustment

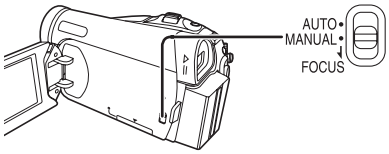
Move the Joystick Control [◄] or [►] until the [AWB] Indication appears. Or, set the [AUTO/MANUAL/FOCUS] Switch to [AUTO].

Adjusting White Balance Manually

White Balance Adjustment recognizes the color of light and adjusts so that white will appear pure white. The Camcorder determines the hue of light that comes through the Lens and White Balance Sensor, thereby judging the recording condition, and selects the closest hue setting. This function is called Automatic White Balance Adjustment.
For light outside the functional Auto White Balance Adjustment range, use the Manual White Balance Adjustment Mode.

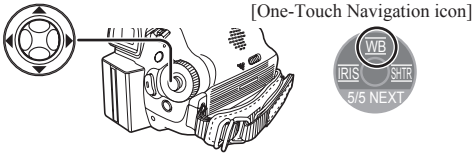
• Set to Tape/Card Recording Mode.

1 Set the [AUTO/MANUAL/FOCUS] Switch to [MANUAL].



- The [MNL] Indication and the One-Touch Navigation icon appears.

2 Move the Joystick Control [▲] to select [WB].



- The White Balance indication appears. ([AWB] etc.)



3 Move the Joystick Control [◄] or [►] until the [] Indication is displayed.



4 Point the Camcorder at a full-screen white subject.

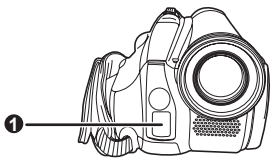
5 Move the Joystick Control [▲] until the [] Indication stops flashing.

To Resume Automatic Adjustment

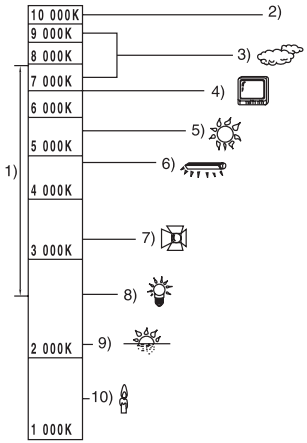
Move the Joystick Control [◄] or [►] until the [AWB] Indication appears. Or, set the [AUTO/MANUAL/FOCUS] Switch to [AUTO].

About White Balance Sensor

The White Balance Sensor ❶ determines the nature of the light source during recording.



- Do not cover the White Balance Sensor with your hand during recording because White Balance will not function normally.



Outside of the effective range of Automatic White Balance Adjustment, the image will become reddish or bluish. Even within the effective range of Automatic White Balance Adjustment, the Automatic White Balance Adjustment may not function properly if there is more than one light source. In this case, adjust the White Balance.

1) The effective range of Automatic White Balance Adjustment on this Camcorder
2) Blue sky
3) Cloudy sky (rain)
4) TV screen
5) Sunlight
6) White fluorescent lamp
7) Halogen light bulb
8) Incandescent light bulb
9) Sunrise or sunset
10) Candlelight

Notes:

- When the Camcorder is turned on with the Lens Cap attached, the automatic White Balance adjustment may not function properly. Please turn the Camcorder on after removing the Lens Cap.
- When setting both the White Balance and the Iris/Gain, set the White Balance first.
- Whenever recording conditions change, re-set the White Balance for correct adjustment.

In the following cases, you cannot change White Balance:

- When you set the Zoom higher than 30×
- When you display a Menu
- When you use the MagicPix Mode

About flashing of the [] Indication:

When the manual adjustment mode is selected

- Flashing indicates that the White Balance previously adjusted is stored. This setting is stored until the White Balance is adjusted again.

When white balance cannot be set in the manual adjustment mode

- White balance may not be adjusted properly in the manual adjustment mode in dark places. If so, use the auto white balance mode.

During setting in the manual adjustment mode

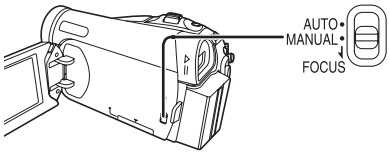
- When the setting is completed, it will keep lit.

Manual Shutter Speed Adjustment

Useful for recording fast-moving subjects.

• Set to Tape/Card Recording Mode.

1 Set the [AUTO/MANUAL/FOCUS] Switch to [MANUAL].



- The [MNL] Indication and the One-Touch Navigation icon appears.

To Resume Automatic Adjustment

Set the [AUTO/MANUAL/FOCUS] Switch to [AUTO].

Notes:

- If you increase the shutter speed manually, the sensitivity lowers and accordingly the gain value

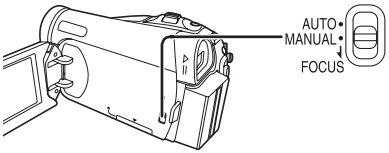
Notes:
- Depending on zoom magnification, there are iris values that are not displayed.
- If the value does not become [OPEN], you cannot adjust the gain value.
- If the gain value is increased, the noise on the screen increases.
- If you are using MagicPix Mode (p. 38) or Scene Mode (p. 40), you cannot adjust the iris.
- If you attempt to adjust the Shutter Speed after setting the Iris, the value set for the Iris will be canceled.

Manual Focus Adjustment

Focus can be adjusted manually for recording in a situation where auto focus may not function well.

- **Set to Tape/Card Recording Mode.**

1 Set the [AUTO/MANUAL/FOCUS] Switch to [MANUAL].



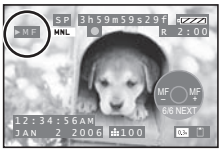
- The [MNL] Indication and the One-Touch Navigation icon appears.

[One-Touch Navigation icon]



2 Slide the [AUTO/MANUAL/FOCUS] Switch to [FOCUS].

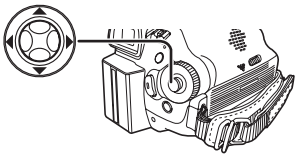
- The [►MF] Indication (Manual Focus Mode) appears.



[One-Touch Navigation icon]



3 Move the Joystick Control [◄] or [►] to adjust the focus.



- If you keep moving the Joystick Control [►] or [◄], the speed of adjusting becomes faster.
- When focused with a wide angle, the subject may not be in focus when zoomed in. First, zoom in on the subject, and then focus on it.

To Resume Automatic Adjustment

Set the [AUTO/MANUAL/FOCUS] Switch to [AUTO] or [FOCUS].

Playback Mode

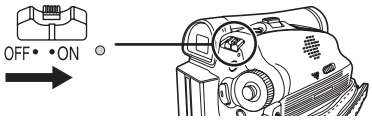
Playing Back a Tape

The recorded scene can be played back immediately after the recording.

- Open the LCD Monitor or extend the Viewfinder before turning on the power.

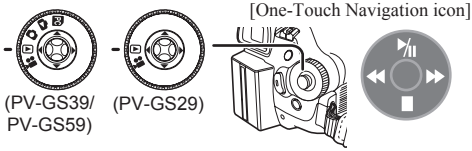
1 Set the [OFF/ON] Switch to [ON].

- The [STATUS] Indicator lights Red.

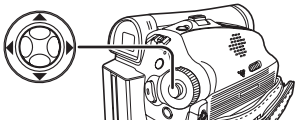


2 Set the Mode Dial to Tape Playback Mode.

- The [▶ TAPE PLAYBACK MODE] is displayed on the screen.
- The One-Touch Navigation icon is displayed on the lower right of the screen.



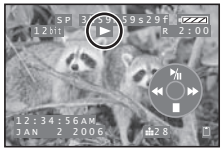
3 Move the Joystick Control [◄] to rewind the tape.



- Rewind the tape to the point where you want to start playback.
- When the tape reaches the beginning, rewinding stops automatically.

4 Move the Joystick Control [▲] to start playback.

- The [►] Indication appears.



- If a cassette recorded with copyright protection signal is played back, the picture is distorted by mosaic-like patterns.

To Pause Playback

Move the Joystick Control [▲] to select [▶II] during playback.

To Stop Playback

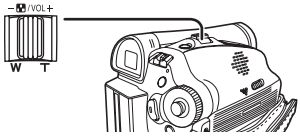
Move the Joystick Control [▼] to select [■].

Adjusting the Sound Volume

Adjust the speaker volume for playback.

1 Push the [– 🔊 / VOL +] Lever to adjust the volume.

- Towards [+]: increases the volume
 Towards [–]: decreases the volume
 (Nearer the bar to [+], larger the volume.)



On the Remote Control, press the [T] Button to increase the volume or the [W] Button to decrease it. (PV-GS59 Only)



Notes:

- When the adjustment is completed, the volume indication [🔊] will disappear.
- If you do not hear the sound, check the settings of [SETUP] >> [12bit AUDIO].

Repeat Playback

When the tape end is reached, the tape will be rewound and played back again.

1 Set [ADVANCED] >> [↻ REPEAT PLAY] >> [ON].

2 Move the Joystick Control [▲] to start playback.

- The [↻►] Indication appears.

To cancel Repeat Playback Mode

Set [↻ REPEAT PLAY] >> [OFF] or set [OFF/ON] Switch to [OFF].

- When you set [USB FUNCTION] >> [WEB CAM] and then connect the USB Cable, the Repeat Playback Mode is canceled.

Settings on the audio

- If you cannot listen to the desired audio when playing back a tape, check the settings in [SETUP] >> [12bit AUDIO].
- When you record or dub the audio in [12bit] and set [SETUP] >> [12bit AUDIO] >> [MIX], the audio will be played back in stereo sound regardless of the settings in [♪ AUDIO OUT].

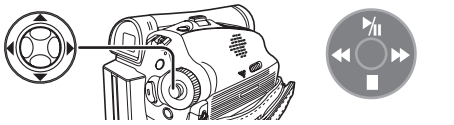
Finding a Scene You Want to Play Back

- **Set to Tape Playback Mode.**
- The One-Touch Navigation icon is displayed on the lower right of the screen.

Cue/Review Playback

1 Move the Joystick Control [◄] or [►] during Playback.
- It turns to Cue Playback Ⓐ or Review Playback Ⓑ.

[One-Touch Navigation icon]



Ⓐ



Ⓑ

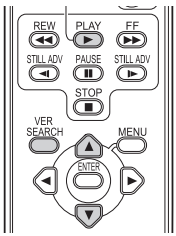


Notes:
- If the Joystick Control is held continuously, it turns to Cue Playback or Review Playback until you release it.
- During Cue/Review playback, fast-moving images may show noise as a mosaic.
- Before and after Cue/Review playback, the screen may become blue for a moment or images may be disturbed.

Variable Speed Search Function (PV-GS59 Only)

The speed of Cue Playback or Review Playback can be varied.

1 During playback, press the [VER SEARCH] Button.
- The [1×►] Indication appears.



2 Press the [▲▼] Button to select a desired search speed.
- The following 6 playback speeds are available for the Variable Speed Search Function in both the fast-forwarding and rewinding directions: 1/5× (slow playback in SP Mode only), 1/3× (slow playback in LP Mode only), 1×, 2×, 5×, 10× and 20×.

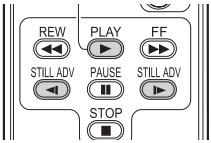
To Resume Normal Playback

Press the [►] Button or [VER SEARCH] Button.

Notes:
- During Cue or Review Playback, fast-moving images may show mosaic-like patterns.
- The sound is muted during search.
- This function is canceled when the One-Touch Navigation icon is displayed.
- The Variable Speed Search function is not available when the Repeat Playback is active.

Slow Motion Playback (PV-GS59 Only)

This Camcorder can play back at a slow speed.
- Scenes recorded in the SP Mode are played back at approximately 1/5th of the normal speed. Scenes recorded in the LP Mode are played back at approximately 1/3rd of the normal speed.
- **Set to Tape Playback Mode.**
- The One-Touch Navigation icon is displayed on the lower right of the screen.



1 Press the [►] Button.

2 Press the [◄I] Button or [I►] Button on the Remote Control.
- The [I►] or [◄I] Indication appears.



- When the [◄I] Button is pressed, Slow Motion Playback proceeds in the reverse direction. When the [I►] Button is pressed, Slow Motion Playback proceeds in the forward direction.
- If the Slow Motion Playback continues for approx. 10 minutes or more, then the playback will automatically stop. (10 minutes of Slow Motion playback is equivalent to approx. 2 minutes in the SP mode or approx. 3 minutes in the LP mode.)
- In the reversed Slow-Motion Playback, the time code indication may be unstable.

To Resume Normal Playback

Press the [►] Button.

yback

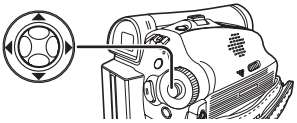
MODE] is

tion icon is displayed
he screen.

[One-Touch Navigation icon]



2 Move the Joystick Control [▲, ▼, ◄, or ►] to select a desired file.



- In the Multi-screen display,
 - Move the Joystick Control [▲, ▼, ◄, or ►] to select a file (The selected file will be encircled by a yellow frame) and press to determine it. The selected file is full-screen displayed.
 - If there are 7 files or more, then move the Joystick Control. The next, or previous Multi-Screen will be displayed.

About the compatibility of still pictures

- The Camcorder is compliant with the unified standard DCF (Design rule for Camera File system) established by JEITA (Japan Electronics and Information Technology Industries Association).
- The file format supported by this Camcorder is JPEG. (Not all JPEG formatted files will be played back.)
- If an out-of specs file is played back, the folder/file name may not be displayed.
- The Camcorder may degrade or not play back data recorded or created on another product and another product may degrade or not play back data recorded on the Camcorder.

Notes:

- While the data on a card are played back, do not operate the Mode Dial.
- If a blank (nothing recorded) Card is played, the screen becomes white.
- If you attempt to play back file recorded in a different format or file data is defective, the whole display becomes bluish and the [UNPLAYABLE CARD] Indication may appear as warning.
- When the Access Lamp is lit, do not insert or remove a card.
- When playing back a picture recorded on other equipment, its size and that of this Camcorder may appear differently.
- It takes time to display the file depending on the number of pixels of the file.
- When playing back a file recorded on other equipment, the date and time display is different from when it was recorded.
- When playing back a picture recorded on other equipment, the picture may not be played back or the quality of pictures may be deteriorated.
- When playing back a non standardized file, the Folder File Number may not be displayed.

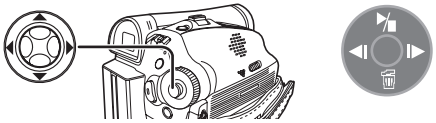
Slide Show (For PV-GS39/PV-GS59)

The recorded still pictures in the Card can be played back like a Slide Show.

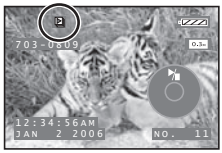
- **Set to Picture Playback Mode.**
- The One-Touch Navigation icon is displayed on the lower right of the screen.

1 Move the Joystick Control [▲] to select [▶/■].

[One-Touch Navigation icon]



- The [🖼] Indication is displayed.



- Each of the pictures are played back for several seconds.

To Stop the Slide Show

Move the Joystick Control [▲] to select [▶/■] again.

Note:

- Playback time may take longer than usual depending on the picture.

Deleting the Files Recorded on a Card (For PV-GS39/PV-GS59)

Using the Camcorder, you can delete the files recorded on a Card. After the file is deleted, it cannot be restored.

- **Set to Picture playback mode.**

The [One Touch Navigation] icons are displayed on the LCD screen.

To Select and Delete Files

1 Move the Joystick Control [▲] or [▼] to select the file to be deleted.

[One Touch Navigation] icons

2 Move the Joystick Control [▼] to select [🗑].

[One Touch Navigation] icons

3 Move the Joystick Control [▲] or [▼] to select [DELETE 1 FILE] and press the Joystick Control.

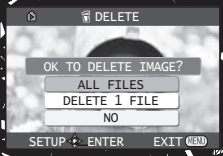
4 Move the Joystick Control [▲] or [▼] to select [YES] and press the Joystick Control.

- The selected file is deleted from the Card.
- If [NO] is selected, the file selection is canceled.

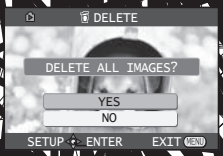
To Sele

1 Mo

2 Mo



Mo



All fil

- A lock

Deleting [] a card by

- A still
 be pla
 erased
 To dele
 files) co
 feature.

Notes:

- Do not turn o
- To delete files
 charged batte
- In case of [ALL
 if there are ma
- When [CARD F
 switch to the P
 delete unneces
- If files conformi
 the data related

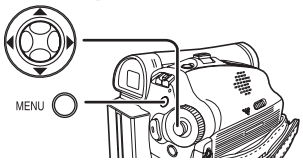
Writing Printing Data on a Card (DPOF Setting) (For PV-GS39/PV-GS59)

DPOF Setting Printing data (DPOF Settings), such as the number of images to be printed, can be written to the Card. “DPOF” means Digital Print Order Format.

- **Set to Picture Playback Mode.**
- The One-Touch Navigation icon is displayed on the lower right of the screen.

1 Set [ADVANCED] >> [DPOF SET] >> [SET].

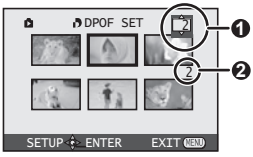
- When all images are not printed, select [CANCEL ALL].





2 Move the Joystick Control [▲, ▼, ◄, or ►] to select a desired picture and press the Joystick Control.

- The selected picture is marked with a frame.
- The number of prints ❶ set to be in DPOF is displayed.



3 Move the Joystick Control [▲] or [▼] to select the number of prints, and press the Joystick Control.

- The number of prints ❷ is displayed in the picture set.
- You can select from 0 to 999. (Selected number of pictures can be printed as you set the number of prints with the printer supporting DPOF.)
- 2 or more files can be set in succession.

4 Repeat Steps 2 and 3 and press the [MENU] Button when the setup is completed.

About the DPOF

DPOF stands for Digital Print Order Format. This enables the printing information to be added to the pictures on the card so that it can be used on a system supporting DPOF.

Notes:

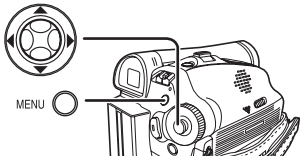
- DPOF setting made on another camera may not be recognized by Camcorder. Perform the DPOF Settings on your Camcorder.
- Verifying the DPOF Settings may take a little time. Wait until the Card Access Lamp goes out.

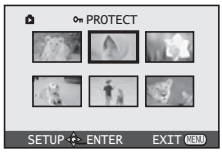
Protecting the Files on a Card (Lock Setting) (For PV-GS39/PV-GS59)

Precious files recorded on a Card can be locked to prevent accidental erasure. (Even if files are locked, the files will be deleted if the Card is formatted.)

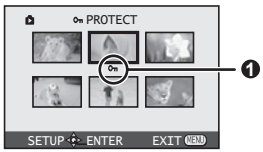
- **Set to Picture Playback Mode.**
- The One-Touch Navigation icon is displayed on the lower right of the screen.

1 Set [BASIC] >> [PROTECT] >> [YES].





2 Move the Joystick Control [▲, ▼, ◄, or ►] to select the file to be locked, and press the Joystick Control.



- The selected file is locked and the [] Indication ❶ appears. Repeat this procedure to lock 2 or more files.
- Press the Joystick Control again to cancel.

3 Repeat Step 2 and press the [MENU] Button when the setup is completed.

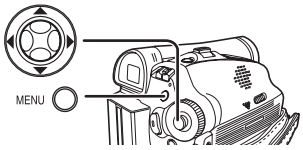
Notes:
- The Lock Setting carried out by this Camcorder is only effective for this Camcorder.
- The SD Memory Card has a write protection switch on it. If the switch is moved to the [LOCK] side, you cannot write to or format the Card. If it is moved back, you can.

Formatting a Card (For PV-GS39/PV-GS59)

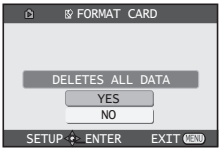
If a Card becomes unreadable by the Camcorder, format it for reuse. Formatting erases all the data recorded on a Card.

- **When formatting the card all protected files (lock) are also deleted.**
- **Set to Picture Playback Mode.**
- The One-Touch Navigation icon is displayed on the lower right of the screen.

1 Set [ADVANCED] >> [FORMAT CARD] >> [YES].



- A confirmation message appears, select [YES] and formatting will be carried out.



- When the formatting is completed, the screen becomes gray.

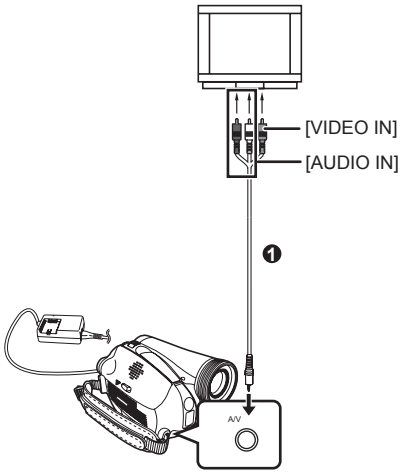
Notes:
- Normally, it is not necessary to format the card. If a message appears even though you insert and remove the card several times, format it.
- In order to maintain full compatibility, you must format the SD Memory Card using the Camcorder.
- PC formatted SD Memory Cards are not compatible with the Camcorder.
- The Camcorder supports SD Memory Cards formatted in FAT12 system (for SD Memory Card of 8, 16, 32 and 64 MB) and FAT16 system (for SD Memory Card of 128, 256, 512 MB, 1 GB and 2 GB).

Playing Back on Your TV

By connecting your Camcorder with your TV, the recorded scenes can be viewed on your TV screen.
- Before connecting them, turn off the power of both the Camcorder and TV.

1 Insert a recorded tape into this Camcorder.

2 Connect the [AV OUT] Jack of the Camcorder and the Video and Audio Input Jacks of the TV.



- Connect to the TV with the AV Cable ❶.

3 Turn on this Camcorder and set the Mode Dial to the Tape Playback Mode.

4 For PV-GS39/PV-GS59 users : Set [SETUP] >> [TV ASPECT] >> [4:3] or [16:9].

5 Select the input channel on the TV.

6 Move the Joystick Control [▲] to select the [] to start playback.
- The image and audio are output on the TV.



7 Move the Joystick Control [▼] to select the [] to stop playback.

If the image or audio from this Camcorder is not output on the TV

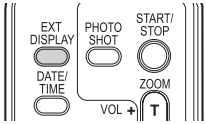
- Check that the plugs are inserted as far as they go.
- Check the [12 bit AUDIO] settings.
- Check the connected terminal.
- Check the TV's input setting (input switch). (For more information, please read the operating instructions for the TV.)

To Display the On-screen Information on the TV

The information displayed on the LCD Monitor or the Viewfinder (One-Touch Navigation icon, time code and mode indication, etc.), date and time can be displayed on the TV.

1 Press the [EXT DISPLAY] Button on the Remote Control. (PV-GS59 Only)

- Press the button again to erase the OSD information.



Note:

- Use the AC adaptor to avoid battery depletion.

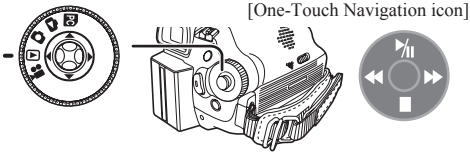
Editing Mode

Recording from a Tape onto a Card (For PV-GS39/PV-GS59)

Still pictures can be recorded on the Memory Card from scenes that have already been recorded on a cassette.

1 Set the Mode Dial to Tape Playback Mode.
- The One-Touch Navigation icon is displayed on the lower right of the screen.

[One-Touch Navigation icon]



2 Insert a tape which already has recorded contents and a card.

3 Move the Joystick Control [▲] to start playback and set the Camcorder to Still Playback Mode at the scene you wish to record, and press the [PHOTO SHOT] Button.



- Audio will not be recorded.

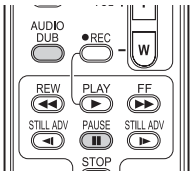
Note:
- If you press the [PHOTO SHOT] Button without pausing, blurred pictures may be recorded.

Audio Dubbing (PV-GS59 Only)

You can add music or narration to the recorded Cassette.
- If the tape recorded in the [16bit] Mode is dubbed with the Audio Dubbing function, the original sound is erased. (If you wish to preserve the original sound, use the [12bit] Mode when recording.)
- Audio Dubbing cannot be performed on a recording made in LP Mode. (p. 29)

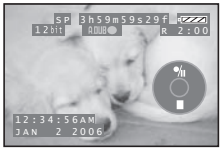
• Set to Tape Playback Mode.

1 Find a scene that you want to add sound to, and press the [▮▮] Button on the Remote Control.



2 Press the [AUDIO DUB] Button on the Remote Control.
- The [ADUB▮▮] Indication appears.

3 To start Audio Dubbing, press the [▮▮] Button on the Remote Control. Or, move the Joystick Control [▲] to select [●/▮▮].
- The [ADUB●] Indication appears.
- Talk into the microphone.



4 Press the [▮▮] Button on the Remote Control to stop audio dubbing. Or, move the Joystick Control [▲] to select [●/▮▮] again.
- The Camcorder is in the Still Playback Mode again.

Before Recording with Audio Dubbing
- **Set to Tape Recording Mode**
- When you want to preserve the original sound taken during recording, set [ADVANCED] >> [♪ AUDIO REC] >> [12bit] to take pictures. (When set [16bit], the sounds taken during recording are erased after recording with audio dubbing.)
- Set [BASIC] >> [REC SPEED] >> [SP] to take pictures.

To Play Back the Sound Recorded by 12bit Audio Dubbing

Set [SETUP] >> [12bit AUDIO] >> [ST1], [ST2] or [MIX].

ST1:	It plays back only the original sound.
ST2:	It plays back only the sound added by Audio Dubbing.
MIX:	It plays back both the original sound and the sound added by Audio Dubbing simultaneously.

- During Audio Dubbing, it is automatically set to [ST2].

Notes:
- The blank section of a tape cannot be dubbed.
- Sounds sent through the DV terminal cannot be dubbed.
- If a tape has a non-recorded portion when the tape is dubbed, images and sounds may be disturbed when this portion of the tape is played back.
- In the case of importing data recorded with Audio Dubbing to a PC using the PC's software, only the original sound (ST1) may be imported, depending on the software.

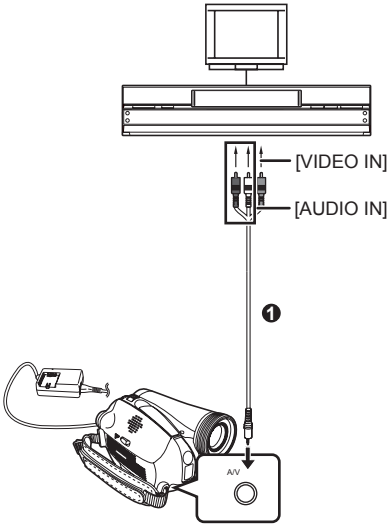
Copying onto a DVD Recorder or a VCR (Dubbing)

Pictures recorded by the Camcorder can be stored on a DVD-RAM or other such media. Refer to the instructions for the recorder.

- **Place a recorded cassette in the Camcorder, and an unrecorded DVD-RAM or cassette in the DVD Recorder or VCR.**

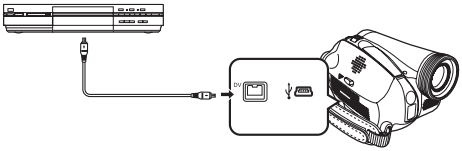
1 Connect the Camcorder and the Recorder.

Connecting with the AV Cable



- Connect the Camcorder and the Recorder by using the AV Cable ❶.

Connecting with the optional DV cable (Only for equipment with a DV terminal)



2 Turn on the Camcorder and set to Tape Playback Mode.

3 Select the input channel on the TV set and recorder.

[One-Touch Navigation icon]

4 Move the Joystick Control [▲] to start playback.

- The image and sound are reproduced.



5 Start recording.

6 Move the Joystick Control [▼] to stop playback.

7 Stop recording.

- If you record (dub) images onto another video device and then play them back on a wide screen TV, the images may be stretched vertically. In this case, refer to the operating instructions for the device that you are recording (dubbing) to or read the operating instructions for the TV and set to 16:9 (full).
- For more information, refer to the operating instructions for your TV set and recorder.
- When you do not need functional indications or date and time indications, press the [EXT DISPLAY] Button on the Remote Control for no indication. (When you connect the Camcorder and a recorder with the DV cable, these indications may not appear.) (PV-GS59 Only)

When neither image nor sound from the Camcorder is output to the TV set

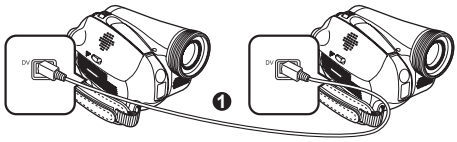
- Check that the plugs are inserted as far as they go.
- Check the [12bit AUDIO] settings.
- Check the connected terminal.

Using the DV Cable for Recording (Digital Dubbing)

By connecting this Camcorder with other digital video equipment (such as another Camcorder of the same format/model) that has a DV input/output Terminal, and using a 4-pin to 4-pin DV Interface Cable PV-DDC9/PV-DDC9-K (optional) ❶, high quality images and sounds can be dubbed in the digital mode.

- **Set to Tape Playback Mode (Player/Recorder)**

1 Connect the Camcorder and digital video equipment with the DV cable.

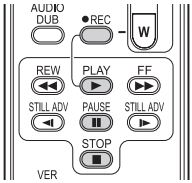


Player/Recorder:

2 Insert the Cassette and set to Tape Playback Mode.

Player:

3 Press the [►] Button to start playback.



Recorder:

4 Set [ADVANCED] >> [REC STDBY] >> [YES], then move the Joystick Control [▲] to select [].



Or, while pressing the [● REC] Button, press the [►] Button on the Remote Control. (PV-GS59 Only)

- Recording starts.

To Cancel the Standby for Recording

When the Camcorder is on standby for recording, move the Joystick Control [▼] and select the [■] or press the [■] Button on the Remote Control.

To Stop Dubbing

Press the [▮▮] Button or the [■] Button, or move the Joystick Control [▲] to select [] again.

CAUTION:
Unauthorized exchanging and/or copying of copyrighted recordings may be copyright infringement.

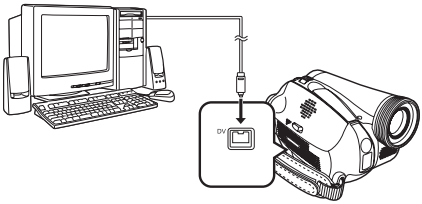
Notes:

- Do not plug or unplug the DV Cable during dubbing, or the dubbing may not be completed properly.
- If a picture (bilingual video, etc.) containing main sound and sub sound has been dubbed, select the desired sound by [SETUP] >> [AUDIO OUT] on playback.
- Regardless of the menu settings on the recorder, digital dubbing is carried out in the same mode as the [AUDIO REC] mode of the playback tape.
- The images on the recorder monitor may be disturbed, but it does not affect the recorded images.
- Even if you use a device equipped with DV Terminals such as IEEE1394, you may not be able to perform Digital Dubbing in some cases. For more information, see the instructions for equipment connected.
- Date or other information to be displayed cannot be displayed if the software of the connected equipment does not support the display function.
- While pictures are input from the DV terminal, the One-Touch Navigation icon blinks on instead of appearing from the side of the screen when you press the center of the Joystick Control.
- While pictures are input from the DV terminal, the TV aspect will not change even if you change the setting for [TV ASPECT] in the [SETUP] menu.

PC Connection With DV Interface Cable

A video clip can be transferred directly to your PC (Personal Computer) via a DV Interface Cable (Optional) using products and software from a number of video editing software companies. Using products from video editing software companies allows you to capture and edit video clips using the DV Interface.

Our DVC being OHCI compliant should have no problem working with any OHCI compliant Firewire Card/video - Editing software package.



- Personal Computer must be equipped with an DV Terminal.
- During Camcorder playback, do not disconnect the DV Interface Cable or turn the Camcorder off as this may cause a PC hang-up error.
- 1394 (i.LINK) Interface must conform to OHCI (Open Host Controller Interface Specification).

With a PC

- **This function is available for models PV-GS39 and PV-GS59.**

Using Camcorder with a PC

An image stored on the DV Cassette or Memory Card can be transferred to your personal computer.

Software Installation (For Windows) (PV-GS59 Only)

1 Turn on the personal computer and start up Windows.

2 Insert the CD-ROM into the personal computer's CD-ROM drive.
- The [Setup Menu] screen appears.



(PV-GS59: Supplied)

3 Select the software to be installed from [Setup Menu].

USB Driver (pp. 56~58) :
When the Camcorder is connected to your PC, you can send video from the Camcorder to other parties via a network or the Internet. This driver is also needed when using MotionDV Studio and Quick Movie Magic with USB connection.

MotionDV STUDIO (pp. 64~67) :
This software allows you to capture video recorded on a tape or images viewed through the Camcorder lens. Connecting the Camcorder with the DV cable also lets you output images edited on your PC to the Camcorder tape.

Quick Movie Magic (pp. 64~67) :
Recordings made with the Camcorder can easily be transferred to your PC where you can enhance them with titles and music.

DirectX :
To activate MotionDV STUDIO and Quick Movie Magic, Microsoft DirectX 9.0b or later should be installed. (When USB Driver is installed, DirectX 9.0b will be installed automatically depending on the operating system environment of the personal computer used.)

Acrobat Reader :
To view the included Operating Instructions, Adobe Acrobat Reader 5.0 or later is required. Please install Adobe Acrobat Reader from the CD-ROM.

4 Follow the instructions on the computer screen until the installation is complete.
- Setup window will disappear when the installation is complete.

- If a window does not appear automatically, click the "Start" Button on your desktop and then click "Run". When the "Run" Box is open, type in "D:\InstMenu.exe" and click "OK". ("D" applies when the CD-ROM drive is drive D.)

Software Installation (For Windows) (PV-GS39 Only)

- If you have Internet access, please download the USB Driver.

USB Driver (pp. 56~58)
When the Camcorder is connected to your PC, you can send video from your Camcorder to other parties via a network or the Internet.

1 To download and install the Driver, go to:
(For U.S.A. consumers)
http://www.panasonic.com/consumerdownloads



(For CANADA consumers)
http://www.panasonic.ca/english/customercare/downloads.asp



2 Click the software to be downloaded.

Using the USB Function

The USB connection can be used in one of the following two ways.

❶ In PC Mode, with the PC connected, the SD drive can be used (pp. 58~59).

❷ In Tape Recording or Tape Playback Mode, with the PC connected, a motion image can be used (pp. 60~63).

- Check your OS in the Operating Environment section on page 57 and if necessary, install the USB Driver before using the USB function.

Operating environment

- Despite having the Operating environment indicated, it may not be possible to use the program with some types of personal computers.
- When you connect to an USB 2.0 interface board, use a certified board with the USB 2.0 (HI-SPEED USB) logo.

For Windows

OS:

❶ Function:

IBM PC/AT compatible personal computer with pre-installed:
Microsoft Windows XP Professional/Home Edition
Microsoft Windows 2000

- The USB equipment operates with the driver installed standard on your OS.

❷ Function:

- This is the Operating environment for the USB Driver which can be installed from the supplied CD-ROM (PV-GS59) or the Web Site (PV-GS39).

IBM PC/AT compatible personal computer with pre-installed:
Microsoft Windows XP Professional/Home Edition SP1 (PV-GS59) / SP2 (PV-GS39) or later
Microsoft Windows 2000 SP4 or later

(PV-GS39 Only)

- For Windows 2000 users:
 Please download and install the USB Driver from the Web Site.
- For Windows XP SP2 users:
 The USB equipment operates with the driver installed standard on your OS.

(PV-GS59 Only)

- You'll need to install the USB Driver from the supplied CD-ROM.

CPU:

Intel Pentium ll 300 MHz or higher
(including compatible CPU)

RAM:

32 MB or more (64 MB or more recommended)

Free hard disk space:

At least 30 MB or more

Interface:

USB 1.1 or more - A Type

For Macintosh

OS:

Mac OS X v 10.1 – X v 10.4
(Function ❶ Only)

CPU:

Power PC G3 (400 MHz or higher), G4, G5

RAM:

64 MB or more

- The USB equipment operates with the driver installed standard on your OS.

Installing the USB Driver

PV-GS59 Only

Install the USB Driver first before connecting the Camcorder to your PC with the USB Cable.

- When DirectX9.0b is installed, applications supported by previous versions of DirectX may not run. In this case, consult the manufacturers of the disabled applications.
- If DirectX 9.0b is not already installed, it must be installed on your PC.

1 Turn on the personal computer and start up Windows.



[PV-GS59: Supplied]

2 Insert the CD-ROM into the personal computer's CD-ROM drive.

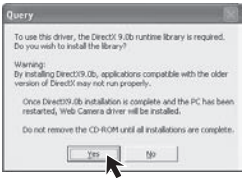
- Quit all applications.
- The [Setup Menu] Screen appears.

3 Click the [USB Driver].

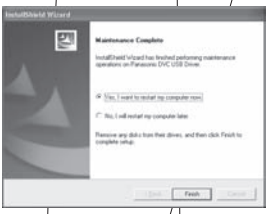
- The set up program starts running.

4 For Windows XP users:
Depending on your system environment, installation of "DirectX9.0b" may be required. Click [Yes] and continue with installation.

- After "DirectX9.0b" is installed, the computer will restart.
- Do not remove the CD-ROM.



5



7 After the USB Driver is installed, please restart your computer.

- Reboot the computer to finish installing USB driver.
- Installation continues after the computer reboots if you selected additional software.

- For Windows XP users, the USB equipment operates with the driver installed standard on your OS.
- If you have Internet access, please download the USB Driver.

http://www.panasonic.com/consumerdownloads



(For CANADA consumers)
http://www.panasonic.ca/english/customercare/downloads.asp

2 (For U.S.A. consumers)
Click [Camcorder] on the screen.

(For CANADA consumers)
Click [software & drivers].

3 Click [USB Driver (for Win Camera)].

4 Decompress the downloaded data.

5 Double-click [Setup].

- The set up program starts running.

6 Finish installation by following the on-screen instructions.

7 After the USB Driver is installed, please restart your computer.

Connecting the Personal Computer and

- **Never connect the USB Cable until the USB Driver is installed.**
- Before making these connections, turn off all devices, which are to be connected.
- It is recommended that you use the AC Adaptor as the power supply of the Camcorder.

By connecting the Camcorder and Personal Computer with the USB Cable, you can transfer still images saved on a Memory Card directly to your Personal Computer.

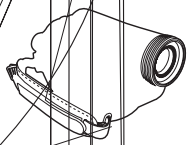
For Windows

OS:
Microsoft Windows XP Professional/Home Edition
Microsoft Windows 2000

1 Insert the Memory Card into the Camcorder.

2 Set the Camcorder to PC Mode.

3 Connect the Camcorder to your personal computer with USB Cable and turn the Camcorder to "ON".

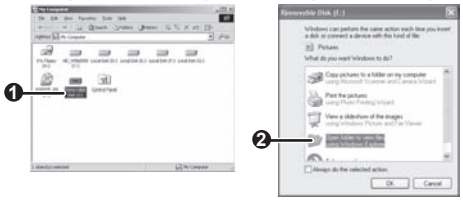


- It enters PC Connecting Mode.
- Appropriate driver to recognize Camcorder is automatically installed by Windows Plug and Play when connected for the first time.

4 Open [My Computer] and click [Removable Disk] ❶ (For Windows 2000 users).

5 Click [Open folder to view files using Windows Explorer] ❷ and then [OK] (For Windows XP users).

[Windows 2000] [Windows XP]



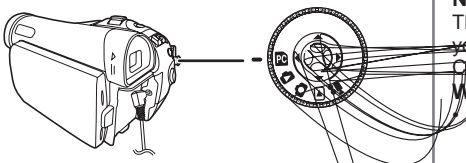
- After the USB Connection Cable is connected to the Camcorder, open [My Computer] or [Windows Explorer] to check that the drive is displayed as a removable disk drive (only when card is inserted into the Camcorder). It enables you to operate it in the same way as a floppy disk drive, and you can use the same drag and drop or copy methods.
- You can view images stored on the Memory Card and also save them to your hard disk.
- Please do not change file or folder names on the Personal Computer. The images on the Memory Card may not be able to be viewed on the Camcorder.

For Macintosh

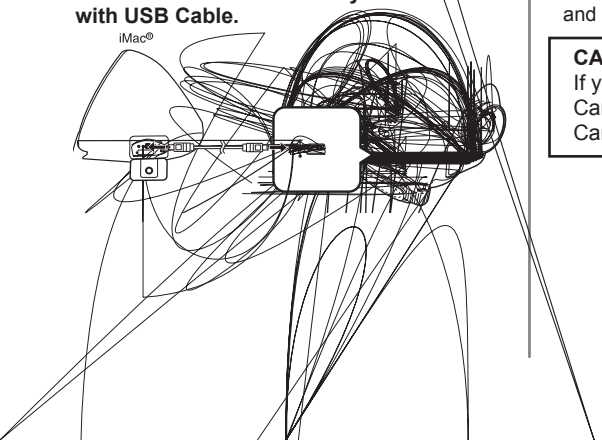
OS:
Mac OS X v 10.1 – X v 10.4

1 Insert the Memory Card into the Camcorder.

2 Set the Camcorder to PC Mode.



Connect the Camcorder to your Macintosh with USB Cable.



4 Double click the "NO_NAME" icon.
- You can view images stored on the Memory Card and also save them to your hard disk.
- Please do not change file or folder names on the Personal Computer. The images on the Memory Card may not be able to be viewed on the Camcorder.

To disconnect USB cable safely

For Windows

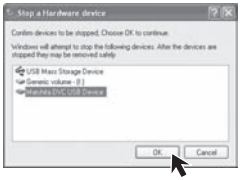
If USB Cable is disconnected while computer is on, error dialog may appear. In such case click [OK] and close the dialog box. By following the steps below you can disconnect the cable safely.

1 Double click the icon in task tray.
- Hardware disconnect dialog appears.



2 Select [USB Mass Storage Device] and click [Stop].

3 Verify [Matshita DVC USB Device] is selected and click [OK].



- You can safely disconnect the cable.

Note on the driver name displayed
The driver name displayed will differ depending on your OS, operating environment and the mode of the Camcorder.

Windows XP/2000:
- When the Camcorder is in PC Mode: [USB Mass Storage Device] or [Matshita DVC USB Device]
- Make sure Camcorder's Card Access lamp is off and disconnect the cable.

CAUTION:
If you disconnect the USB Cable while the Card Access Lamp is on, it may damage the Card data.

For Macintosh

Removing the USB Cable safely for Macintosh

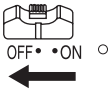


❶ Drop the [NO_NAME] icon which appeared when you connected the Camcorder with the USB Cable into the recycle bin, then disconnect the USB Cable.

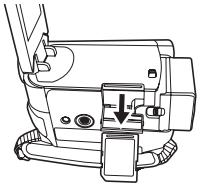
If the above operation is not performed correctly, when data is copied from the personal computer to an SD Memory Card, the copied data may be damaged.

Even when the following operations are performed, the same results will occur as when the USB Cable is removed (above). Therefore, it is imperative that the above operation ❶ is completed before proceeding.

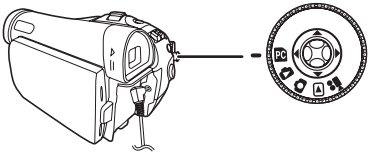
- When Camcorder power is turned OFF.



- When SD Memory Card is removed.



- When Mode Dial is turned to change modes.



Using as a Web Camera

If the Camcorder is connected to your personal computer, you can send video and sound from the Camcorder to the other parties via the network.

- **Do not connect the USB Cable until the USB Driver is installed. (pp. 57~58)**

Please see chart below.

[Send]		[Receive]	[Software]
Windows XP	← OK →	Windows XP	Windows Messenger/ MSN Messenger
Windows XP	← OK →	Windows 2000	MSN Messenger
Windows 2000	← OK →	Windows 2000	MSN Messenger

Operating environment

OS:
IBM PC/AT compatible personal computer with preinstalled;
Microsoft Windows XP Home Edition/Professional SP1 (PV-GS59) / SP2*1 (PV-GS39) or later
Microsoft Windows 2000 Professional SP4 or later

CPU:
Intel Pentium III 450 MHz or higher
(including compatible CPU)

RAM:
128 MB or more (256 MB or more recommended)

Free hard disk space:
At least 250 MB or more

Interface:
USB 1.1 or more - A Type

To use the Camcorder as a Web Camera, the additional minimum requirements must be met.

Graphic display:
High Color (16 bit or more)
Desktop resolution of 800 × 600 pixels or more

Communication Speed:
56 kbps or faster is recommended.

Necessary software:
Windows Messenger 5.0/5.1 (Windows XP)
MSN Messenger 7.0/7.5 (Windows XP/2000)
DirectX 9.0b/9.0c (Windows XP SP1 (PV-GS59 Only))

*1 When your OS is Windows XP SP2, the USB Driver is not needed.

Other requirements (to send/receive audio):
Sound card
Speaker or headphones

To use the Camcorder as a Web Camera, the following conditions must be met.

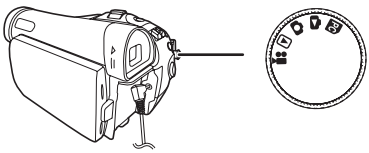
- To upgrade Windows XP to SP1 (PV-GS59) / SP2 (PV-GS39) or later, click [Start] >> [All Programs] >> [Windows Update]. (Requires Internet connection.)
- To upgrade Windows 2000 to SP4 or later, click [Start] >> [All Programs] >> [Windows Update]. (Requires Internet connection.)
- You have direct dial-up connection capability to the Internet. Also, you and the other person(s) are in the same Network (LAN).
- Install Windows Messenger (Windows XP). If you have a version older than 5.0/5.1, download the latest version (5.0/5.1) from the Microsoft Home Page.
 The latest version of MSN Messenger can also be downloaded from the Microsoft Home Page.
 http://www.microsoft.com/
 (For download and installation instructions, please refer to Help on the Home Page.)
- If you are connected to the Internet through a firewall or a router, proper communication will not be possible.

Connecting the Camcorder to Personal Computer (For Using as a Web Camera)

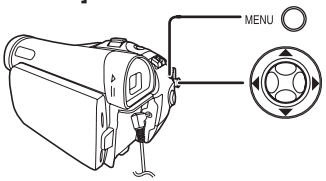
1 Install the USB Driver. (pp. 57~58)

2 Set the Camcorder to Tape Recording Mode or Tape Playback Mode.

- To send the live camera picture to a PC, set the Camcorder to Tape Recording mode.
- To send pictures recorded on a tape to a PC, set the Camcorder to Tape Playback mode.

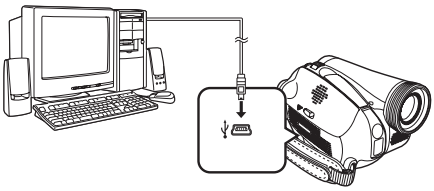


3 For PV-GS59 users :
Tape Recording Mode :
Set [ADVANCED] >> [USB FUNCTION] >> [WEB CAM].
Tape Playback Mode :
Set [BASIC] >> [USB FUNCTION] >> [WEB CAM].



4 Connect the Camcorder to your personal computer with USB Cable.

- The [WEB] is displayed on the screen.

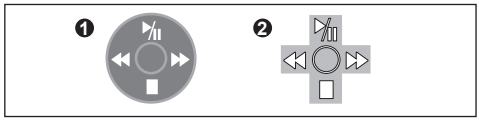


- **When the Camcorder and personal computer (with Windows 2000) are connected via USB Cable, a message, such as the one below, is displayed. However, testing by the manufacturer has confirmed functionality of this Camcorder with Windows 2000. Click [Yes] and proceed.**



When you use the Camcorder as a Web camera

When you use the Camcorder as a Web camera in the Tape Playback Mode, the indication of the One-Touch Navigation icon is different from the one in usual operation.



❶ In usual operation

❷ In the WEB CAMERA mode (Tape Playback Mode)

- Even if you move the Joystick Control [▲▼◄►] (, , ,), the selected direction on the One-Touch Navigation icon is not lit in yellow.
- The One-Touch Navigation icon blinks on instead of appearing from the side of the screen when you press the center of the Joystick Control.

5 Start the Windows Messenger (For Windows XP users) or MSN Messenger (For Windows 2000 users).

- Click [Start] >> [All Programs (Program)] >> [Windows Messenger] or [MSN Messenger].

- When you use Windows XP, the other parties via the network have to use the Windows Messenger on Windows XP. When you use other than Windows XP, the other parties via the network have to use MSN Messenger on an OS other than Windows XP.
- If the Camcorder is used as a Web Camera, the quality of the video to be exchanged will depend on the Internet connection status.
- If the USB Cable is disconnected from the personal computer, the Web Camera mode is canceled.
- If the Camcorder is used as a Web Camera, video cannot be recorded onto a tape or a card.
- You cannot output the video input from the DV terminal to the display of the PC.
- In the Web Camera mode, the audio may be interrupted in the middle of communication depending on the communication environment or the performance of the personal computer.
- For Windows XP SP2 users, if the [Windows Security Alert] screen is displayed, click [Unblock] and proceed.

Setting up the Windows Messenger

When starting the Windows Messenger for the first time, its setup screen is displayed. (However, the screen is not displayed if the Windows Messenger setup has already been done.) For more details, please read the corresponding Help file.

1 Click [Click here to sign in].



2 Select [.NET Messaging Service] and click [OK].



3 Click [Next] when the [.NET Passport Wizard] dialog appears.



4 Please carefully read the displayed contents and then proceed.

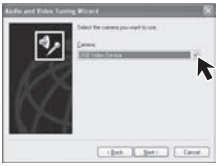
5 After the setup is completed, sign in and start the Windows Messenger.



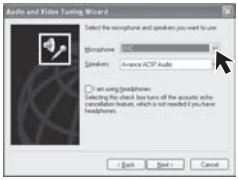
6 Click on [Audio Tuning Wizard...] in the [Tools] menu to confirm that equipment is connected correctly.



7 Select [USB Video Device] in the [Camera] menu.



8 Select [DVC] in the [Microphone] menu.



- For other information about Windows Messenger, please refer to Help.
- When access is finished, close Windows Messenger, then turn off the Camcorder. Finally, disconnect the USB Cable.
- If the Camcorder is used as Web Camera continuously for two hours, the communication is automatically shut OFF. In this case, restart Windows Messenger and set up the communication again.

Setting up the MSN Messenger

When starting the MSN Messenger for the first time, its setup screen is displayed. (However, the screen is not displayed if the MSN Messenger setup has already been done.) For more details, please read the corresponding Help file.

In the case of MSN Messenger 7.0

1 Click [Sign In].



2 Type in your Sign-in name and password.
- If you do not have your Sign-in name and password, click [Get one here].

3 Please carefully read the displayed contents and then proceed.

4 After the setup is completed, sign in and start MSN Messenger.

5 Click on [Audio Tuning Wizard...] in the [Tools] menu to confirm that equipment is connected correctly.

6 Select the microphone attached to the PC in the [Microphone] menu.

7 Click [Web Camera Settings...] in the [Tools] menu.

8 Confirm that the [Panasonic DVC Web Camera Device] is selected.

In the case of MSN Messenger 7.5

1 Type in your E-mail address and password.



- If you do not have a password, click [Get a new account].

2 After setup is completed, sign in and start MSN Messenger.

3 Click [Audio and Video Setup] in the [Tools] menu and then click [Next].

4 Set up the speaker settings.

5 Select [DVC] in the microphone setup screen.



6 Select [USB Video Device] in the Webcam setup screen and then click [Finish].
- For other information about MSN Messenger, please refer to Help.
- When access is finished, close MSN Messenger, then turn off the Camcorder. Finally, disconnect the USB cable.

Using the Motion Picture Editing Software (PV-GS59 Only)

Quick Movie Magic

You can easily transfer recordings made with your Camcorder to a PC where you can enhance them with titles and music

- For advanced users who want to make more precise edits, MotionDV STUDIO offers convenient features.
 The edited contents set with Quick Movie Magic can be opened in the MotionDV STUDIO where the recording can be made as desired.

MotionDV STUDIO

The Motion DV STUDIO is the software that allows videos to be captured from a video device, edited and outputted. Digital edition on a PC (Non-linear edit) enables you to create video works with minimum deterioration of image quality. You can also apply various special effects such as fade effects, transition effects and titles to videos.

Operating environment

The Camcorder can be connected to the personal computer with the DV Cable.
The Camcorder can be connected to the personal computer with the USB Cable, however, USB Driver must be installed.

- **Do not connect the USB Cable until the USB Driver is installed. (pp. 57~58)**
- USB Driver must be installed when you connect the Camcorder to the PC with the USB Cable and use Quick Movie Magic or MotionDV STUDIO.
- Despite having the Operating environment indicated, it may not be possible to use the program with some types of personal computers.
- When you connect to an USB 2.0 interface board, use a certified board with the USB 2.0 (HI-SPEED USB) logo.

OS:
IBM PC/AT compatible personal computer with pre-installed:
Microsoft Windows XP Home Edition/Professional SP2 or later
Microsoft Windows 2000 Professional SP4 or later
CPU:
Intel Pentium III 800 MHz or higher
(including compatible CPU)
Graphic display:
High Color (16 bit) or more
(32 bit or more recommended)
Desktop resolution of 1 024 × 768 pixels or more
(Supporting the overlay of DirectDraw)
4 MB or more video memory
(16 MB or more recommended)
Sound:
PCM sound source (Compatible Direct Sound)
RAM:
256 MB or more
(Adding more memory enables you to operate the personal computer more comfortably.)
Hard disk:
Ultra DMA – 33 or more
Free hard disk space:
640 MB
(When you capture video, 1 GB is needed for data of approx. 4 minutes.)
Interface:
DV (IEEE1394) terminal (IEEE1394.a)
USB 2.0 (Hi-Speed compliant) - A Type
DirectX 9.0b or later
Windows Media Player 6.4 or later
Other requirements:
Mouse
CD-ROM Drive

- This software is not compatible with a multi-CPU environment.
- This software is not compatible with a multi-boot environment.
- Operation on Microsoft Windows XP Media Center Edition, Tablet PC Edition and 64 bit operating system is not guaranteed.

Installation of Quick Movie Magic

1 Insert the supplied CD-ROM into the personal computer's CD-ROM drive.

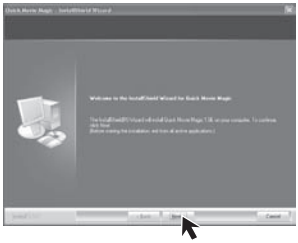
- Quit all applications.
- The [Setup Menu] screen appears.

2 Click [Quick Movie Magic].



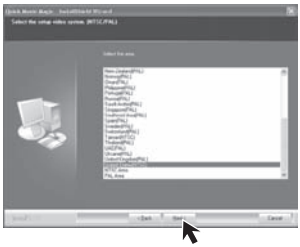
[PV-GS59: Supplied]

3 Click [Next].



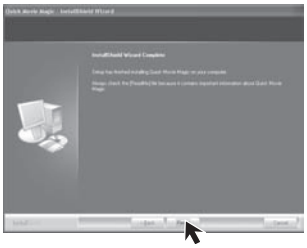
- After reading the displayed contents, please carry out the installation according to instructions.

4 Select the Video system.



- The [Readme] screen is displayed. Please carefully read the displayed contents and close the [Readme] screen.

5 After the completion of setup, click on [Finish].



- Sample data is installed concurrently with the Quick Movie Magic software.

6 Click [Finish] when the [Restarting Windows] dialog appears.

- Reboot the computer to finish installing Quick Movie Magic.

Installation of MotionDV STUDIO

1 Insert the supplied CD-ROM into the personal computer's CD-ROM drive.

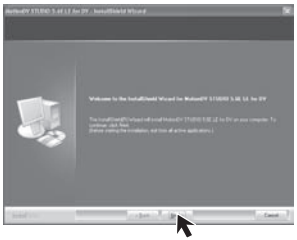
- Quit all applications.
- The [Setup Menu] screen appears.

2 Click [MotionDV STUDIO].



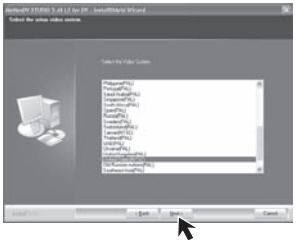
[PV-GS59: Supplied]

3 Click [Next].



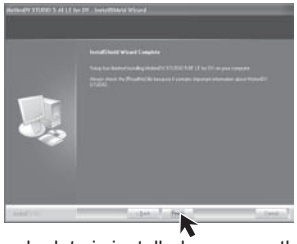
- After reading the displayed contents, please carry out the installation according to instructions.

4 Select the Video system.



- The [Readme] screen is displayed. Please carefully read the displayed contents and close the [Readme] screen.

5 After the completion of setup, click on [Finish].



- Sample data is installed concurrently with the MotionDV STUDIO software.

6 Click [Finish] when the [Restarting Windows] dialog appears.

- Reboot the computer to finish installing MotionDV STUDIO.

To start Quick Movie Magic or MotionDV STUDIO

If you wish to capture data from a tape, set the Camcorder to Tape Playback Mode and insert the tape. If you wish to capture images from the lens of the Camcorder, set the Camcorder to the Tape Recording Mode and remove the tape and the card.

With USB (supplied)

OS:

Windows XP SP2 or later
Windows 2000 SP4 or later

- The personal computer should be compatible with USB 2.0 Hi-Speed.

Confirmation before connection (For Windows XP/2000)

When you connect the personal computer and the Camcorder with the USB Cable and then use Quick Movie Magic or MotionDV STUDIO on Windows XP (SP2 or later) or Windows 2000 (SP4 or later), check the driver of the USB host controller.

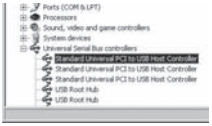
- It is required to use the driver for which [Microsoft] is displayed on [Driver Provider] in [Driver] tab.

1 Select [Start] >> [Settings] >> [Control Panel] to start [System].

- [System Properties] is displayed.

2 Click [Hardware] tab and then click [Device Manager] then [Universal Serial Bus controllers].

3 Right-click [Enhanced Host Controller] and then select [Properties].



- The indication [Enhanced Host Controller] is changed as [EHCI] depending on the host controller you use.

4 Click [Driver] tab to check the description on [Driver Provider].



- If [Microsoft] is displayed on [Driver Provider], the confirmation procedure is completed.

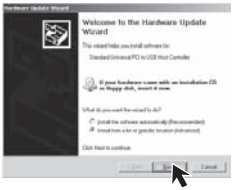
If a description other than [Microsoft] is displayed

- Update the driver with the following procedure.

1 Click [Update Driver...].



2 Check [Install from a list or specific location (Advanced)] and then click [Next].



- When your OS is Windows 2000, click [Next] after [Update Device Driver Wizard] appears.

3 For Windows XP Users:
Check [Don't search. I will choose the driver to install] and then click [Next].



For Windows 2000 Users:
Check [Display a list of the known drivers for this device so that I can choose a specific driver] and then click [Next].



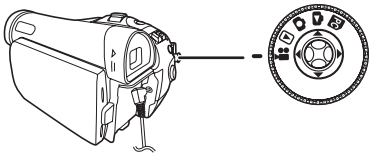
4 Click [Standard Universal PCI to USB Host Controller] and then click [Next].

5 Click [Finish].

- The update of the driver is completed. Connect the Camcorder.

Connecting the Camcorder to a personal computer

1 Set the Camcorder to Tape Recording Mode or Tape Playback Mode.



2 Set [BASIC] or [ADVANCED] >> [USB FUNCTION] >> [MOTION DV].

- It enters MotionDV STUDIO (Quick Movie Magic) Mode.

3 Connect the Camcorder to your personal computer with USB Cable.

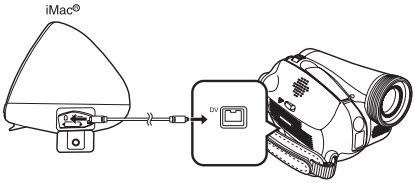


4 To start Quick Movie Magic:
Select [Start] >> [All Programs (Programs)] >> [Panasonic] >> [Quick Movie Magic 1.0E] >> [Quick Movie Magic].

To start MotionDV STUDIO:
Select [Start] >> [All Programs (Programs)] >> [Panasonic] >> [MotionDV STUDIO 5.6E LE for DV] >> [MotionDV STUDIO LE for DV].

- Using the Quick Movie Magic or MotionDV STUDIO for Windows, a variety of visual effects can be added and titles can be created.
- You cannot record a video edited by the PC onto the Tape in the Camcorder.

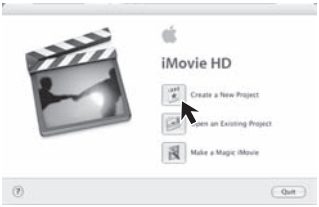
2 Connect the Camcorder to your Macintosh with the DV Cable.



3 Click the [iMovie HD] icon.



4 Click [Create a New Project].



5 Click [Create] in the [Create Project] screen and select a folder in which to save the motion pictures.

- "Camera connected" is displayed.
- Confirm the [] is selected.



6 Click [] to playback the tape.

7 Click [Import] to capture the motion pictures you wish to save.

- For more information about iMovie HD, please refer to Help.

For more information, please contact Apple at **http://www.apple.com**

Notes

- Macintosh and iMovie HD from Apple are the registered trademark of Apple Computer, Inc.
- Microsoft® Windows®, Windows Messenger®, MSN Messenger® and DirectX® are either trademarks or registered trademarks of the Microsoft Corporation in the United States and/or other countries.
- Intel®, Pentium® and Celeron® are the registered trademarks or trademarks of the Intel Corporation.
- All other names, company names, product names, etc. in these instructions are the trademarks or registered trademarks of their respective corporations.
- The names of the products you are using may differ from the names given in the text. Depending on the operating environment and other factors, the contents of the screens used in these instructions may not necessarily match what you will see on your screen.
- Although the screens in these Operating Instructions are shown in English for the sake of example, other languages are supported as well.
- In this Manual, the Panasonic make digital video camera with USB Jack is referred to as Camcorder.
- These instructions do not cover the basic operations of the personal computer or define any terms. For this information, refer to the Operating Instructions which accompany your personal computer.
- Do not disconnect USB Cable while the operation light of Camcorder is on. It may freeze the software or destroy the data in transfer.
- We recommend using the AC adaptor as the power source for the Camcorder when connecting to the personal computer. Data may be lost if the battery power is lost while transferring data.
- If the Camcorder is used as a Web Camera while virus checking software is running, the Camcorder's operation may stop midway through. In this case, exit the Windows Messenger or MSN Messenger, reconnect the Camcorder and restart the Windows Messenger or MSN Messenger.
- Do not delete the folders in the memory card such as picture folder. Memory card may not be recognized if folders are deleted.
- When the Camcorder is switched to the PC Mode while it is connected to the personal computer, the operation mode of the Camcorder cannot be switched. In this case, disconnect the USB Connection Cable. Switch the operation mode of the Camcorder and reconnect the Cable.
- When the Tape Recording Mode of the Camcorder is switched to the PC Mode, a warning message may be displayed. You may simply ignore it.
- When you are using Windows XP or Windows 2000, you may install or uninstall this software after logging ON by setting the user name to Administrator or to a user name having equivalent authority.

- If you install the USB Driver after the USB Cable is connected, or if you do not follow these Operating Instructions, the Camcorder will not be recognized correctly. In this case, delete the USB Driver from [Device Manager] as described below, uninstall the USB Driver, and re-install it.
 - With the Camcorder and personal computer connected via a USB Cable, open the [Device Manager]. Right-click [!DVC] ❶ in [Ports] or [Other devices], and select [Uninstall]. ([!DVC] ❶ will differ depending on the OS or operating environment of your personal computer.)

(For Windows)



About the SD Memory Card

SD Memory Card (Optional)

The SD Memory Card is an external Memory Card that is available in larger capacities. It has a write protect switch to prevent data writing and card formatting, as well as a copyright protection function.

- SD Logo is a trademark.
- All other company and product names in the operating instructions are trademarks or registered trademarks of their respective corporations.

Files recorded on an SD Memory Card

It may not be possible to play back the files on this Camcorder recorded on and created by other equipment or vice versa. For this reason, check the compatibility of the equipment in advance.

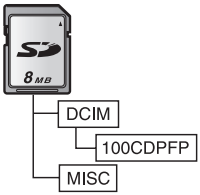
About the compatibility of the card files

Data files recorded on an “SD Memory Card” by this Camcorder conform with DCF (Design rule for Camera File system) established by JEITA (Japan Electronics and Information Technology Industries Association).

- If you attempt to play back files recorded with this Camcorder on other equipment or to play back files recorded with other equipment on this Camcorder, you may not be able to play them back. Please check the compatibility with the other equipment in advance.

About the folder structure when using the Memory Card in a personal computer

- When a Card with data recorded on it is inserted into a personal computer, folders will be displayed as shown in the following figure.



[100CDPFP]:
The images (IMGA0001.JPG, etc.) in this folder are recorded in the JPEG format.
[MISC]:
Files in which DPOF Data has been set to the image are in this folder.

- [DCIM], etc. are necessary items in the folder structure. They have nothing to do with actual operation.
- In the Card Mode, the Camcorder automatically saves file numbers (IMGA0001.JPG, etc.) along with the images. The file numbers are recorded with each image as consecutive numbers.
- When using software without an indication function, indication data, such as date, are not displayed. Depending on the software in use, the date and the time may not be displayed correctly.
- The memory capacity indicated on the SD Card label corresponds to the total card capacity. Some of this capacity is used to protect and manage the copyright data, and not all capacity is available as a conventional memory for a Camcorder, Personal Computer or others.

Others

Indications

Various functions and the Camcorder status are shown on the screen.

Basic indications:

: Remaining battery power
0h00m00s00f: Time code
12:34:56PM: Date/Time indication

Recording indications:

R0:45: Remaining tape time

- Remaining tape time is indicated in minutes. (When it reaches less than 3 minutes, the indication starts flashing.)

: Tape Recording Mode (p. 30)
: Tape Playback Mode (p. 45)
: Card Recording Mode (p. 32)
: Picture Playback Mode (p. 47)
: PC Mode (pp. 58~59)
SP : Standard Play Mode (Recording Speed Mode) (p. 29)
LP : Long Play Mode (Recording Speed Mode) (p. 29)
AUTO : Automatic Mode (p. 30)
MNL : Manual Mode (pp. 40~44)
EIS : Image Stabilizer (p. 36)
12 bit, 16 bit : Audio Recording Mode (p. 28)
MF: Manual Focus (p. 44)
: Back Light Mode (p. 37)
: Sports Mode (Scene Mode) (p. 40)
: Portrait Mode (Scene Mode) (p. 40)
: Low Light Mode (Scene Mode) (p. 40)
: Spotlight Mode (Scene Mode) (p. 40)
: Surf & Snow Mode (Scene Mode) (p. 40)
● : Recording (p. 30)
❚❚ (Green) : Recording Pause (p. 30)
❚❚ (Green Flash) : Standby Mode
❚❚ : Still Playback (p. 47)
: Self-Timer Recording (p. 35)
► : Playback (p. 45)
►► : Fast-forward/Cue Playback (p. 46)
◄◄ : Rewind/Review Playback (p. 46)
◄I, I► : Slow Motion Playback (p. 46)
◄II, II► : Still Advance Playback (p. 47)
: Recording Check (p. 31)
A.DUB● : Audio Dubbing (p. 53)
A.DUB❚❚ : Audio Dubbing Pause (p. 53)
: Blank Search (p. 31)
►: Repeat Playback (p. 45)
2×►►: Variable Speed Search (p. 46)

1/500 : Shutter Speed (pp. 42~43)
: Slide Show Playback (p. 48)
F2.4 : F Number (p. 43)
6dB Gain Value (p. 43)
W : Fade (White) (p. 37)
B : Fade (Black) (p. 37)
AWB : Auto White Balance (p. 41)
: White Balance Adjustment Mode (pp. 41~42)
: Outdoor Mode (p. 41)
: Indoor Mode (recording under incandescent lamp) (p. 41)
: MagicPix Function (p. 38)
ZOOM : Zoom Microphone (p. 35)
: Wind Noise Reduction (p. 39)
: Soft Skin Mode (p. 38)
: Volume adjustment (p. 45)
12:34:56AM: Date/Time Indication (p. 28)
, : Photoshot Picture Quality (p. 32)
0 : Remaining Number of Photoshot pictures (When the remaining number of Photoshot pictures reaches 0, the red indication flashes.)
100-0001 : Folder/File Display
No. 00 : File Number
1 : Number of DPOF Setting (p. 50)
: RapidFire Consecutive Photoshot Recording (p. 33)
: Lock Setting (p. 50)
: LED Video Light is on. (pp. 33~34)
: Gain up (pp. 33~34)
WEB : Web Camera Mode (p. 61)
16:9 Wide Mode (p. 39)
0.3M [640 × 480] Image size
0.2M [640 × 320] Image size

- For images not recorded with this Camcorder, the size display is determined as follows according to the number of horizontal pixels.

(White): Photoshot Mode
(Red): While Photoshot recording is activated
(Green): While the Card being read
(Red): Using a card that cannot be recognized

Warning/Alarm Indications

If any one of the following indications lights up or flashes, please check the Camcorder.

Confirmatory Indications

CHANGE TO MANUAL MODE:
You are attempting to select an item other than [OFF] in [SCN SCENE MODE] when the [AUTO/MANUAL/FOCUS] Switch is set to [AUTO].
CAN NOT OPERATE
(MOTION DV MODE) (PV-GS59 Only):
You are attempting to change [D.ZOOM] setting during MotionDV Mode.
TURN OFF THE VIDEO LIGHT:
You are attempting to select an item in [SCN SCENE MODE] when Light is on.
REVERSE THE LCD MONITOR:
When the LCD Monitor is rotated by 180° towards the lens, the brightness of the LCD Monitor cannot be adjusted.

Cautions for Use

After Use

1 Take out the Cassette. (pp. 18~19)

2 Set the [OFF/ON] Switch to [OFF].

3 Take out the Card. (pp. 19~20)

4 Detach the power supply and retract the Viewfinder or the LCD Monitor. (pp. 21~22)

5 To protect the Lens, attach the supplied Lens Cap.

Cautions for Use

When you use your Camcorder on a rainy or snowy day or on a beach, make sure that no water enters the Camcorder.

- Water may cause the Camcorder or Cassette to malfunction. (Irreparable failure may occur.)
- If sea water splashes onto the Camcorder, wet a soft cloth with tap water, wring it well, and use it to wipe the camera body carefully. Then, wipe it again thoroughly with a soft dry cloth.

Keep the Camcorder away from magnetized equipment (such as a microwave oven, TV, video game equipment, etc.).

- If you use the Camcorder on or near a TV, images or sounds may be disturbed due to electromagnetic wave radiation.
- Do not use near a cell phone because doing so may cause noise to adversely affect the picture and sound.
- Recordings on the tape may be damaged, or images may be distorted, by strong magnetic fields created by speakers or large motors.
- Electromagnetic wave radiation generated by a microprocessor may adversely affect the Camcorder, causing the disturbance of images and sounds.
- If the Camcorder is affected by magnetically charged equipment and does not function properly, turn off the Camcorder power and detach the Battery or AC Adaptor and then connect the Battery or AC Adaptor again. Thereafter, turn on the Camcorder power.

Do not use your Camcorder near radio transmitters or high-voltage cables.

- If you record pictures near radio transmitters or high-voltage cables, recorded images or sounds may be adversely affected.

Do not use this Camcorder for surveillance purposes or other business use.

- If you use the Camcorder for a long period of time, the internal temperature increases and, consequently, this may cause malfunction.
- This Camcorder is not intended for business use.

When you use your Camcorder on a beach or similar place, do not let sand or fine dust get into the Camcorder.

- Sand or dust may damage the Camcorder or Cassette. (Care should be taken when inserting and removing the Cassette.)

Do not spray insecticides or volatile chemicals onto the Camcorder.

- If the Camcorder is sprayed with such chemicals, the camera body may be deformed and the surface finish may peel off.
- Do not keep rubber or plastic products in contact with the Camcorder for a long period of time.

Do not use benzine, thinner or alcohol for cleaning the Camcorder.

- The Camcorder body may be deformed and the surface finish may peel off.
- Before cleaning, detach the Battery or pull out the AC Cable from the AC Jack.
- Wipe the Camcorder with a soft dry cloth. To remove stubborn stains, wipe with a cloth that is soaked in a detergent diluted with water and afterwards finish wiping with a dry cloth.
- For storing or transporting the Camcorder, place it in a bag or case lined with soft pads so as to prevent the coating on the camera body from being worn.

After use, be sure to take the Cassette out and detach the Battery from the Camcorder or pull out the AC Cable from AC Jack.

- If the Cassette is left in the Camcorder, the tape sags and deteriorates.
- If the Battery is left on the Camcorder for a long time, the voltage drops excessively, and the Battery will not function even after it is recharged.

About AC Adaptor

- If the temperature of the Battery is extremely high or extremely low, the [CHARGE] Lamp may continue flashing, and the Battery may not be charged. After the temperature of the Battery has decreased or increased sufficiently, charging starts automatically. If the [CHARGE] Lamp continues to flash even after the Battery temperature has decreased or increased sufficiently, the Battery or AC Adaptor may be faulty. In this case, please contact a dealer.
- If the Battery is warm, charging takes a longer time than normal.
- If you use the AC Adaptor near a radio, radio reception may be disturbed. Keep the AC Adaptor 3 feet (1 meter) or more away from radio.
- When using the AC Adaptor, it may generate whirring sounds. However, this is normal.
- After use, be sure to pull out the AC Cable from the AC Jack. (If they are left connected, a minute amount of current is consumed.)
- Always keep the electrodes of the AC Adaptor and Battery clean.

Condensation

If you turn the Camcorder on when condensation occurs on the head or the tape, Condensation Indication [💧] is displayed on the Viewfinder or the LCD Monitor and the messages [💧DEW DETECT] or [💧EJECT TAPE] (only when the tape is inserted) appear. In this case, follow the procedure below.

1 Remove the tape if it is inserted.
- It takes about 20 seconds to open the Cassette Holder. This is not a malfunction.

2 Leave the Camcorder with the Cassette Compartment Cover closed to cool or warm it to the ambient temperature.

3 Turn the Camcorder on again, set it to the Tape Recording/Playback Mode and then check if the condensation indication disappears.

Especially in cold conditions, dew may be frozen. In this case, it may take more time before the condensation indication disappears.

Watch for Condensation even before the Condensation Indication is displayed.

- The condensation indication may not appear depending on circumstances. When condensation occurs on the lens or the Camcorder, it also may occur on the head and the tape. Do not open the Cassette Compartment Cover.

When the Lens Is Fogged:

Set the [OFF/ON] Switch to [OFF] and leave the Camcorder in this condition for about 1 hour. When the lens temperature becomes close to the ambient temperature, the fog disappears naturally.

Video Head Clogging and Care

If the heads (the parts that make contact with the tape) are dirty, mosaic-pattern noise may appear on the playback image, or the screen as a whole becomes black. If the heads are extremely dirty, recording performance deteriorates, and, in the worst case, the Camcorder cannot record at all.

Causes of Dirty Heads

- Large quantity of dust in the air
- High-temperature and high-humidity environment
- Damaged tape
- Long operating hours

Using Panasonic cleaning cassette (AY-DVMCLA)

1 Set the Mode Dial to Tape Playback Mode.
- The One-Touch Navigation icon is displayed on the lower right of the screen.



2 Insert the Head Cleaner into the Camcorder in the same manner as a Video Cassette.

3 Move the Joystick Control [▲], and approximately 15 seconds later, move the Joystick Control [▼]. (Do not rewind the tape.)

4 Take out the Head Cleaner. Insert a Video Cassette and start recording. Then, play the tape back to check the recorded image.

5 If the image is not still clear, repeat Steps 1 to 4. (Do not use the Head Cleaner 3 times or more consecutively.)

Notes:

- Do not rewind every time you use the Head Cleaner. Rewind only when the tape reaches the end, and then use it again from the beginning in the same manner as before.
- If the heads become dirty soon after cleaning, the tape may be damaged. In this case, immediately stop using that Cassette.
- Do not clean the heads excessively. (Excessive cleaning may cause excessive wear of the heads. If the heads are worn, images cannot be played back even after the heads are cleaned.)
- If the dirty heads cannot be cleaned with the Head Cleaner, the Camcorder needs to be cleaned at a Servicenter. Please consult a dealer.
- Head cleaning due to dirty heads is not considered a malfunction of the product. It is not covered by the warranty.

Periodical Check-up

To maintain the highest image quality, we recommend replacement of worn parts, such as heads, etc., after approximately 1000 hours of use. (This, however, depends on operating conditions, such as temperature, humidity, dust, etc.)

Optimal Use of the Battery

Battery Characteristics

This Battery is a rechargeable lithium ion battery. Its ability to generate power is based upon the chemical reaction that takes place inside it. This reaction is susceptible to the surrounding temperature and humidity, and, if the temperature is too high or too low, the operating time of the Battery becomes shorter. If the Battery is used in an extremely cold environment, the Battery may operate only for about 5 minutes. If the Battery becomes extremely hot, a protective function may operate, and the Battery may become unusable for a while.

Be Sure to Detach the Battery after Use

Be sure to detach the Battery from the Camcorder. (If it is left attached to the Camcorder, a minute amount of current is consumed even when the Camcorder power is off.) If the Battery is left attached to the Camcorder for a long time, over-discharge takes place. The Battery may become unusable after it is charged.

Disposing of an Unusable Battery

- The Battery has a limited life.
- Do not throw the Battery into fire because it may cause an explosion.

Always Keep the Terminals of the Battery Clean

Prevent the terminals from getting clogged with dirt, dust, or other substances. If you drop the Battery accidentally, check to see if the Battery body and terminals are deformed. Attaching a deformed Battery to the Camcorder or AC Adaptor may damage the Camcorder or AC Adaptor.

Cautions for Storage

Before storing the Camcorder, take the Cassette out and detach the Battery.

Store all the components in a dry place with a relatively stable temperature.
(Recommended Temperature: 15 °C to 25 °C (59 °F to 77 °F), Recommended Humidity: 40 % to 60 %)

Camcorder

- Wrap it with a soft cloth to prevent dust from getting into the Camera.
- Do not leave the Camcorder in places that expose it to high temperature.

Battery

- Extremely high temperatures or low temperatures will shorten the life of the Battery.
- If the Battery is kept in smoky or dusty places, the terminals may rust and cause malfunctions.
- **Do not allow the Battery terminals to come in contact with metal objects (such as necklaces, hairpins, etc.). This can result in a short circuit or heat generation and, if you touch the Battery in this condition, you may be badly burned.**
- Store the Battery in a completely discharged state. To store the Battery for a long period of time, we recommend you charge it once every year and store it again after you completely use up the charged capacity.

Cassette

- Before storing it, rewind the tape to the beginning. If the Cassette is left for more than 6 months with the tape stopped midway, the tape sags (although it depends on the storage condition). Be sure to rewind to the beginning.
- Store the Cassette in its case. Dust, direct sunlight (ultraviolet rays), or humidity may damage the tape. Dust contains hard mineral particles, and dusty Cassettes damage the heads of the Camcorder and other components. Develop a habit of returning the Cassette back to its case.
- Once every half year, wind the tape to the end and then rewind it to the beginning. If the Cassette is left for 1 year or longer without winding or rewinding, temperature and humidity changes may cause the Cassette to deform due to swelling, shrinking, and so forth. The wound tape may stick to itself.
- Do not place a Cassette near highly magnetic substances or equipment.
- The surface of tape is covered with extremely minute magnetic particles, upon which signals are recorded. Magnetic necklaces, toys, etc., have magnetic force that is stronger than you may normally expect, and they may erase the contents of a recording or may cause noise in images and sounds.

Card

- When the Card is being read, do not remove the Card, turn off the power, or subject it to vibration or impact.
- Do not leave the Card in places where there is high temperature or direct sunlight, or where electromagnetic waves or static electricity are easily generated.
- Do not bend or drop the Card. The Card or the recorded content may be damaged.
- After use, be sure to remove the Card from the Camcorder.
- After usage, store the supplied SD Memory Card in the enclosed bag.
- Do not touch the terminals on the back of the Card with your fingers. Do not allow dirt, dust or water to enter it.
- Keep the Memory Card out of reach of children to prevent swallowing.

LCD Monitor/Viewfinder/Lens Hood

LCD Monitor

- In a place with drastic temperature changes, condensation may form on the LCD Monitor. Wipe it with a soft dry cloth.
- If your Camcorder is extremely cold when you turn its power on, the image on the LCD Monitor is slightly darker than usual at first. However, as the internal temperature increases, it goes back to the normal brightness.

Extremely high precision technology is employed to produce the LCD Monitor screen featuring a total of approximately 105,000 pixels (PV-GS29) / 112,000 pixels (PV-GS39/PV-GS59). The result is more than 99.99 % effective pixels with a mere 0.01 % of the pixels inactive or always lit. However, this is not a malfunction and does not affect the recorded picture.

Viewfinder

- Do not direct the Viewfinder or Lens to the sun. Internal components may be seriously damaged.
- When the Camcorder is used with a large capacity Battery attached to it, it is not practical to look in the Viewfinder from behind the Battery.

Extremely high precision technology is employed to produce the Viewfinder screen featuring a total of approximately 113,000 pixels. The result is more than 99.99 % effective pixels with a mere 0.01 % of the pixels inactive or always lit. However, this is not a malfunction and does not affect the recorded picture.

Lens Hood

- When you wish to attach the Tele Conversion Lens (not supplied), Wide Conversion Lens (not supplied), MC Protector (not supplied), or ND Filter (not supplied), rotate these in a clockwise direction.
- If you push the [W/T] Lever toward [W] during recording with the filter and conversion lens attached to the Camcorder, 4 corners of the image may become dark (vignetting). For details, please refer to the operating instructions of your accessories.

Before Requesting Service (Problems and Solutions)

Power/Body
The Camcorder power cannot be turned on. • Is the battery fully charged? Use a fully charged battery. • The battery protection circuit may have operated. Attach the battery to the AC adaptor for 5 to 10 seconds. If the Camcorder still cannot be used, the battery is faulty. • Is the LCD Monitor or the Viewfinder open?
The Camcorder power is turned off automatically. • If you set [POWER SAVE] to [5 MINUTES] and do not operate the Camcorder for about 5 continuous minutes, the power is automatically turned off for tape protection and power conservation. To resume recording, turn the [OFF/ON] switch to [OFF]. Then turn it to [ON] again. (p. 29) Also, if you set [POWER SAVE] to [OFF], the power does not automatically turn off.
The Camcorder power does not stay on long enough. • Is the battery low? If the remaining battery power indication is flashing or the message [LOW BATTERY] is displayed, the battery has run down. Charge the battery or attach a fully charged battery. (p. 15) • Has condensation occurred? When you carry the Camcorder from a cold place into a warm place, condensation may occur inside it. If so, the power is turned off automatically, disabling all operations except for taking cassettes out. Wait until the condensation indication disappears. (p. 73)
Battery runs down quickly. • Is the battery fully charged? Charge it with the AC adaptor. (p. 15) • Are you using the battery in an extremely cold place? The battery is affected by ambient temperature. In cold places, the operating time of the battery becomes shorter. • Has the battery worn out? The battery has a limited life. If the operating time is still too short even after the battery is fully charged, depending on the usage, the battery has worn out and can no longer be used.

The screen has changed suddenly.
- Has the demonstration started? In the Tape Recording mode, if you set [DEMO MODE] >> [ON] without inserting a cassette or a card, the demonstration starts. For normal use, set this function to [OFF]. (p. 29)

A cassette cannot be inserted.
- Has condensation occurred? Wait until the condensation indication disappears.

Auto focus function does not work.
- Is manual focus mode selected? If auto focus mode is selected, focus is automatically adjusted.
- There are some recording subjects and surroundings for which the auto focus does not operate correctly. (p. 79) If so, use the manual focus mode to adjust the focus. (p. 44)
- Is the MagicPix function set? When the MagicPix function is working, focusing shifts into the manual mode.

Indications

A sentence is displayed in red or yellow in the screen center.
- Read the contents and respond to them. (pp. 71~72)

The time code becomes inaccurate.
- The time code indication counter may not be constant in the reversed slow-motion playback, but this is not a malfunction.

The remaining tape time indication disappears.
- The remaining tape time indication may disappear temporarily during Still Advance Playback or other operation. If you continu0.103rarye recordingoer

The remaining tape timelindication does not

Playback (Sound)

Sound is not played back from the built-in speaker of the Camcorder.
- Is the volume too low? During playback, push the [– / VOL +] lever to display the volume indication and adjust it. (p. 45)

Different sounds are reproduced at the same time.
- Have you set [SETUP] >> [12bit AUDIO] >> [MIX]? If you set [AUDIO REC] >> [12bit] and dub audio to a recorded tape, you can hear the sound on recording and the sound dubbed at a later time. To hear the sounds separately, set to [ST1] or [ST2]. (p. 53)
- Have you set [SETUP] >> [AUDIO OUT] >> [STEREO] and reproduced a picture containing the main sound and sub sound? Set to [L] to hear main sound, and set to [R] to hear the sub sound. (p. 29)

Audio dubbing cannot be performed (PV-GS59 Only).
- Is the accidental erasure prevention slider on the cassette open? If it is open (set to [SAVE]), audio dubbing cannot be performed. (p. 19)
- Are you attempting to edit a tape portion that was recorded in LP mode? LP mode does not allow audio dubbing. (p. 29)

The original sound was erased when audio dubbing was performed (PV-GS59 Only).
- If you perform audio dubbing on a recording made in [16bit] mode, the original sound will be erased. If you wish to preserve the original sound, be sure to select [12bit] mode when recording.

Sounds cannot be played back.
- Although a cassette with no audio dubbing is being played, have you set [SETUP] >> [12bit AUDIO] >> [ST2]? To play back a cassette with no audio dubbing, set [12bit AUDIO] >> [ST1]. (PV-GS59 Only) (p. 53)
- Is the variable speed search function activated? Press the [VER SEARCH] button on the Remote Control to cancel the variable speed search function. (PV-GS59 Only) (p. 46)

Playback (Pictures)

Mosaic-pattern noise appears on images during cue or review playback.
- This phenomenon is characteristic of digital video systems. It is not a malfunction.

Horizontal stripes appear on images during cue and review playback.
- Horizontal stripes may appear depending on the scene, but this is not a malfunction.

Although the Camcorder is correctly connected to a TV, playback images cannot be seen.
- Have you selected video input on the TV? Please read the operating instructions of your TV and select the channel that matches the input terminals used for the connection.

Playback picture is not clear.
- Are the heads of the Camcorder dirty? If the heads are dirty, playback image cannot be clear. Clean the heads by using the head cleaner for digital video. (p. 73)
- If the terminal for the AV cable is soiled, noises may appear on the screen. Wipe the soil off the terminal with a soft cloth, and then connect the cable to the AV terminal.
- Is a picture containing a copyright protection signal (copy guard) being recorded? When a protected picture is played back by the Camcorder, mosaic-like patterns appear on the picture.

Card

Recorded pictures are not clear.
- Have you set [BASIC] >> [PICT. QUALITY] >> [(Normal)]? If recording is done with it set to [(Normal)], pictures with fine details may include a mosaic-like pattern. Set [PICT. QUALITY] >> [(High)]. (p. 32)

A file recorded on a card cannot be deleted.
- Is the file locked? Locked files cannot be deleted. (p. 50)
- For the SD Memory Card, if its write protect switch is set to [LOCK], then deletion is disabled. (p. 20)

Photoshot playback images do not look normal.
- The picture may be damaged. In order to prevent the loss of image data, backing up on a cassette or a personal computer is recommended.

Even if a card is formatted, it cannot be used.
- Either the Camcorder or the card may be damaged. Please consult a dealer.

During playback, [UNPLAYABLE CARD] is displayed.
- The image was either recorded in a different format, or data is damaged.

Explanation of Terms

Digital Video System

In a digital video system, images and sounds are converted into digital signals and recorded on a tape. This complete digital recording is capable of recording and playback with minimal image and sound deterioration.
In addition, it automatically records data, such as Time Code and Date/Time, as digital signals.

Compatibility with S-VHS or VHS Cassettes

Because this Camcorder employs a digital system for recording image and sound data, it is not compatible with conventional S-VHS or VHS video equipment that employs an analog recording system.
The size and shape of the Cassettes are also different.

Compatibility with Output Signals

Because AV signal output from the AV signal output Jack is analog (the same as conventional video systems), this Camcorder can be connected with S-VHS or VHS video or a TV for playback.

Focus

Auto Focus Adjustment

The Auto Focus System automatically moves forward and backward the focusing lens inside the Camcorder to bring the subject into focus so that the subject can be seen clearly.
However, the Auto Focus System does not function properly for the following subjects or under the following recording conditions.

Please use the Manual Focus Mode instead.

1) **Recording a subject whose one end is located closer to the Camcorder and the other end farther away from it**
 - Because Auto Focus makes adjustments at the center of an image, it may be impossible to focus on a subject that is located in both foreground and background.
2) **Recording a subject behind dirty or dusty glass**
 - Because the focus is on the dirty glass, the subject behind the glass will not be focused.
3) **Recording a subject in dark surroundings**
 - Because the light information that comes through the lens decreases considerably, the Camcorder cannot focus correctly.
4) **Recording a subject that is surrounded by objects with glossy surfaces or by highly reflective objects**
 - Because the Camcorder focuses on the objects with glossy surfaces or on highly reflective objects, the subject may become blurry.
5) **Recording a fast-moving subject**
 - Because the focus lens-inside moves mechanically, it cannot keep up with the fast-moving subject.
6) **Recording a subject with little contrast**
 - Because the Camcorder achieves focus based upon the vertical lines of an image, a subject with little contrast, such as a white wall, may become blurry.

Time Code

Time Code signals are data that indicate time measured in hours, minutes, seconds, and frames (30 frames per second). If this data is included in a recording, an address is assigned to each image on the tape.

- The Time Code is automatically recorded as a part of the sub-code at each recording.
- When a new (previously unrecorded) Cassette is inserted, the Time Code automatically starts from zero. If a recorded Cassette is inserted, the Time Code picks up from the point where the last scene was recorded. (In this case, when the Cassette is inserted, the zero display [0h00m00s00f] may appear, but the Time Code starts from the previous value.)
- The Time Code cannot be reset to zero.
- Unless the Time Code is continuously recorded from the beginning of a tape, accurate editing may not be possible. To ensure that the Time Code will be recorded with no breaks, we recommend the use of the Blank Search Function (p. 31) before recording a new scene.

Specifications

Digital Camcorder

Information for your safety

Power Source:
DC 7.9/7.2 V
Power Consumption:
Recording
4.2 W **(PV-GS29)**
4.4 W **(PV-GS39/PV-GS59)**

Recording Format:
Mini DV (Consumer-use Digital Video SD Format)
Tape Used:
6.35 mm digital video tape
Recording/Playback Time:
SP: 80 min.; LP: 120 min. (with DVM80)
Video
Recording System:
Digital Component
Television System:
EIA Standard: 525 lines, 60 fields NTSC color signal
Audio
Recording System:
PCM Digital Recording
16 bit (48 kHz/2ch), 12 bit (32 kHz/4ch)
Image Sensor:
1/6-inch CCD Image Sensor
Lens:
Auto Iris, F1.8 to F3.9, Focal Length; 1.9-57 mm, Macro (Full Range AF)
Filter Diameter:
30.5 mm
Zoom:
30:1 Power Zoom
Monitor:
2.5-inch LCD **(PV-GS29)**
2.7-inch Wide LCD **(PV-GS39/PV-GS59)**
Viewfinder:
Color Electronic Viewfinder
Microphone:
Stereo
Speaker:
1 round speaker 20 mm
Standard Illumination:
1,400 lx
Minimum Required Illumination:
2 lx (MagicPix Mode)
Video Output Level:
1.0 Vp-p, 75 Ω
Audio Output Level (Line):
316 mV, 600 Ω
Mic Input:
Mic sensitivity -50 dB (0 dB=1 V/Pa, 1 kHz)
USB:
Card reader/writer function, USB 2.0 compliant (Hi-Speed (**PV-GS59**)) (Full-Speed (**PV-GS39**))
No copyright protection support
Digital Interface:
DV Input/Output Jack (IEEE1394, 4-pin)
Dimensions:
Approx. 69 (H) × 82 (W) × 120 (D) mm
Approx. 2-11/16 (H) × 3-1/4 (W) × 4-3/4 (D) inch
Mass:
Approx. 0.41 kg (0.90 lbs.)
(without Battery and DV cassette)
Operating Temperature:
0 °C to 40 °C (32 °F to 104 °F)
Operating Humidity:
10 % to 80 %
Card Memory Functions
Recording Media:
SD Memory Card
(8 MB /16 MB /32 MB /64 MB / 128 MB /256 MB /512 MB /1 GB/2 GB (Maximum))

Please confirm the latest information on the following website.
http://panasonic.co.jp/pavc/global/cs
(This Site is English only.)

Still picture recording file format:
JPEG (Design rule for Camera File system, based on Exif 2.2 standard), DPOF corresponding
Still Image Size:
640 × 480 pixels (VGA)
WEB Camera
Compression:
Motion JPEG
Image Size:
320 × 240 pixels (QVGA)

AC Adaptor

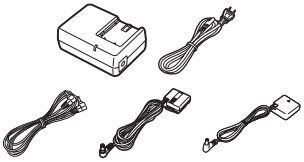
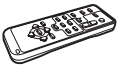
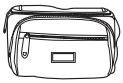
Information for your safety

Power Source:
AC 110 to 240 V, 50/60 Hz
Power Consumption:
19 W
DC Output:
DC 7.9 V, 1.4 A (Camcorder Operation)
DC 8.4 V, 0.65 A (Battery Charging)

Dimensions:
61 (W) × 32 (H) × 91 (D) mm
2-6/16 (W) × 1-4/16 (H) × 3-9/16 (D) inch
Mass:
Approx. 0.11 kg (0.24 lbs.)

Mass and dimensions are approximate values.
Specifications may change without prior notice.

Camcorder Accessory System

Accessory #	Figure	Description
PV-DAC14		AC Adaptor with AC Cable and DC Cables
CGR-DU06A/1B		640 mAh/Rechargeable Lithium Ion Battery Pack
CGA-DU12A/1B		1 150 mAh/Rechargeable Lithium Ion Battery Pack
CGA-DU21A/1B		2 040 mAh/Rechargeable Lithium Ion Battery Pack
PV-DDC9 (For USA) PV-DDC9-K (For Canada)		DV Interface Cable (i.LINK) (4-pin to 4-pin)
RP-SDK02GU1A RP-SDK01GU1A RP-SDK512U1A RP-SDH256U1A RP-SDQ02GU1A RP-SDQ01GU1A RP-SD512BU1A RP-SD256BU1A RP-SD128BU1A RP-SD064BPPA RP-SD032BPPA		Pro High Speed 2 GB SD Memory Card Pro High Speed 1 GB SD Memory Card Pro High Speed 512 MB SD Memory Card Super High Speed 256 MB SD Memory Card High Speed 2 GB SD Memory Card High Speed 1 GB SD Memory Card High Speed 512 MB SD Memory Card High Speed 256 MB SD Memory Card High Speed 128 MB SD Memory Card High Speed 64 MB SD Memory Card High Speed 32 MB SD Memory Card
N2QAEC000017 (PV-GS59 Only)		IR Remote Control
BN-SDPC3E		SD PCMCIA Adaptor (compatible with MultiMediaCard)
PV-HB002 (USA only)		Carrying Case

• Please refer to page 82, when placing an order.

***NOTE: Accessories and/or model numbers may vary by country. Please consult your local dealer.**

Camcorder Accessory Order Form (For U.S.A. customers)

Please photocopy this form when placing an order.

1. Camcorder Model #

2. Items Ordered _____

Accessory #	Description	Price Each	Quantity	Total Price
			Subtotal	
			Your State & Local Sales Tax	
			Shipping & Handling	6.95
			Total Enclosed	

3. Method of payment (check one)

- ☐ Check of Money Order enclosed (NO C.O.D.SHIPMENTS)
- ☐ VISA Credit Card # _____
- ☐ MasterCard Expiration Date _____
- ☐ Discover Customer Signature _____

Make Check or Money Order to: PANASONIC ACCESSORIES

(Please do not send cash)

4. Shipping information (UPS delivery requires complete street address)

Ship To:
Mr.
Mrs.
Ms. _____
First Last

Street Address

_____ _____ _____
City State Zip

Phone #:
Day () _____
Night () _____

TO OBTAIN ANY OF OUR CAMCORDER ACCESSORIES YOU CAN DO ANY OF THE FOLLOWING:
VISIT YOUR LOCAL PANASONIC DEALER
OR
CALL PANASONIC'S ACCESSORY ORDER LINE AT 1-800-332-5368
[6 AM-5 PM M-F, 6 AM-10:30 AM SAT, PACIFIC TIME]
OR
MAIL THIS ORDER TO: PANASONIC SERVICES COMPANY ACCESSORY ORDER OFFICE
20421 84th Avenue South Kent, WA. 98032

Request for Service Notice (For U.S.A. customers)

Please photocopy this form when making a request for service notice.

Request for Service Notice:

In the unlikely event this product needs service.

- Please include your **proof of purchase**. (Failure to do so will delay your repair.)
- To further speed your repair, please provide an explanation of what is wrong with the unit and any symptom it is exhibiting.

Mail this completed form and your Proof of Purchase along with your unit to:
Panasonic Services Company
410B Airport Road
Elgin, IL 60123-9333
Attn: Camcorder Repair

Limited Warranty (For U.S.A. customers)

PANASONIC CONSUMER ELECTRONICS COMPANY, DIVISION OF PANASONIC CORPORATION OF NORTH AMERICA
One Panasonic Way Secaucus, New Jersey 07094

PANASONIC SALES COMPANY, DIVISION OF PANASONIC PUERTO RICO, INC.,
AVE. 65 de Infantería, Km. 9.5 San Gabriel Industrial Park, Carolina, Puerto Rico 00985

Panasonic Video Products
Limited Warranty

Limited Warranty Coverage
If your product does not work properly because of a defect in materials or workmanship, Panasonic Consumer Electronics Company or Panasonic Sales Company (collectively referred to as "the warrantor") will, for the length of the period indicated on the chart below, which starts with the date of original purchase ("warranty period"), at its option either (a) repair your product with new or refurbished parts, or (b) replace it with a new or a refurbished product. The decision to repair or replace will be made by the warrantor.

Product	Parts	Labor	Service	Contact Number
Camcorder	One (1) Year (except CCD Image Sensor) CCD Image Sensor - 6 (Six) One (1) Year (exceptRTor)			

Customer Services Directory

Obtain Product Information and Operating Assistance; locate your nearest Dealer or Servicenter; purchase Parts and Accessories; or make Customer Service and Literature requests by visiting our Web Site at:

http://www.panasonic.com/consumersupport

or, contact us via the web at:

http://www.panasonic.com/contactinfo

You may also contact us directly at:
1-800-211-PANA (7262),
Monday-Friday 9 am-9 pm; Saturday-Sunday 10 am-7 pm, EST.

For hearing or speech impaired TTY users, TTY : 1-877-833-8855

Accessory Purchases

Purchase Parts, Accessories and Instruction Books online for all Panasonic Products by visiting our Web Site at:
http://www.pasc.panasonic.com

or, send your request by E-mail to:
npcparts@us.panasonic.com

You may also contact us directly at:
1-800-332-5368 (Phone) 1-800-237-9080 (Fax Only) (Monday – Friday 9 am to 8 pm, EST.)
Panasonic Services Company
20421 84th Avenue South,
Kent, WA 98032
(We Accept Visa, MasterCard, Discover Card, American Express, and Personal Checks)

For hearing or speech impaired TTY users, TTY : 1-866-605-1277

Product Repairs

Centralized Factory Servicenter

MAIL TO :

Panasonic Services Company
410B Airport Road
Elgin, IL 60123-9333
Attention: Camcorder Repair

Please carefully pack and ship, prepaid and insured, to the Elgin Centralized Factory Servicenter. Customer's in Puerto Rico, please ship or carry in to location below ("Service in Puerto Rico").

Service in Puerto Rico
Panasonic Puerto Rico, Inc. Panasonic Sales Company
Factory Servicenter:
Ave. 65 de Infantería, Km. 9.5, San Gabriel Industrial Park,
Carolina, Puerto Rico 00985
Phone (787)750-4300, Fax (787)768-2910

As of October 2005

Warranty (For Canada customers)

Panasonic Canada Inc.

5770 Ambler Drive, Mississauga, Ontario L4W 2T3

PANASONIC PRODUCT – LIMITED WARRANTY

Panasonic Canada Inc. warrants this product to be free from defects in material and workmanship and agrees to remedy any such defect for a period as stated below from the date of original purchase.

Camcorder Product – One (1) year, parts and labour

LIMITATIONS AND EXCLUSIONS

This warranty does not apply to products purchased outside Canada or to any product which has been improperly installed, subjected to usage for which the product was not designed, misused or abused, damaged during shipping, or which has been altered or repaired in any way that affects the reliability or detracts from the performance, nor does it cover any product which is used commercially. Dry cell batteries are also excluded from coverage under this warranty.

This warranty is extended to the original end user purchaser only. A purchase receipt or other proof of date of original purchase is required before warranty service is performed.

THIS EXPRESS, LIMITED WARRANTY IS IN LIEU OF ALL OTHER WARRANTIES, EXPRESS OR IMPLIED, INCLUDING ANY IMPLIED WARRANTIES OF MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE.

IN NO EVENT WILL PANASONIC CANADA INC. BE LIABLE FOR ANY SPECIAL, INDIRECT OR CONSEQUENTIAL DAMAGES.

In certain instances, some jurisdictions do not allow the exclusion or limitation of incidental or consequential damages, or the exclusion of implied warranties, so the above limitations and exclusions may not be applicable.

WARRANTY SERVICE

For product operation and information assistance, please contact your Dealer or our Customer Care Centre at:

Telephone #: (905) 624-5505 Fax #: (905) 238-2360 Web: www.panasonic.ca

For product repairs, please contact one of the following:

- Your Dealer who will inform you of an authorized Servicentre nearest you.
- Our Customer Care Centre at (905) 624-5505 or www.panasonic.ca
- A Panasonic Factory Servicentre listed below:

Richmond, British Columbia	Mississauga, Ontario
Panasonic Canada Inc.	Panasonic Canada Inc.
12111 Riverside Way	5770 Ambler Dr.
Richmond, BC V6W 1K8	Mississauga, ON L4W 2T3
Tel: (604) 278-4211	Tel: (905) 624-8447
Fax: (604) 278-5627	Fax: (905) 238-2418

IF YOU SHIP THE PRODUCT TO A SERVICENTRE

Carefully pack and send prepaid, adequately insured and preferably in the original carton. Include details of the defect claimed, and proof of date of original purchase.

Precauciones para su seguridad

ADVERTENCIA:

Para evitar incendios y descargas eléctricas, no exponga este equipo a la lluvia ni a la humedad.

Su Mini DV Camcorder está diseñada para grabar y reproducir en el modo de Reproducción Estándar (SP) y modo Largo (LP).
Se recomienda el uso sólo de cintas de cassette que hayan sido probadas e inspeccionadas para su uso en aparatos VCR con la marca Mini DV.





Este símbolo tiene por finalidad alertar al usuario acerca de la presencia de tensión sin aislación en el interior del producto, que puede tener la intensidad suficiente como para causar descargas eléctricas. Por lo tanto, hacer contacto con cualquier pieza en el interior de la unidad es peligroso.



Este símbolo tiene por finalidad alertar al usuario de la presencia de importantes instrucciones de operación y mantenimiento en la literatura incluida con la unidad. Por lo tanto, lea detenidamente la literatura incluida para evitar problemas.

La etiqueta de régimen está pegada en la base de la cubierta del cargador.

Este dispositivo cumple con la parte 15 de las Reglas del FCC. El funcionamiento está sujeto a las dos siguientes condiciones: (1) Este dispositivo puede no causar interferencias perjudiciales, y (2) este dispositivo debe aceptar cualquier interferencia recibida, incluyendo interferencias que pueden causar un funcionamiento no deseado.

Nota:
Este equipo ha sido puesto a prueba y se encontró que cumple con la Parte 15 de las reglas del FCC. Estos limites están diseñados para proveer una protección razonable contra interferencias cuando se opera en un ambiente residencial.
Si este equipo causa interferencias en la recepción de radio o televisión, lo cual se puede comprobar al apagar y encender el equipo, utilice el equipo en otra ubicación y/o utilice un tomacorriente diferente al que está utilizando el receptor.
Si es necesario, consulte con el distribuidor o un técnico experto de radio/TV para solicitar ayuda. Puede encontrar útil el folleto 'Información sobre las interferencias' disponible en las oficinas regionales del FCC local.

Advertencia del FCC:
Para asegurar la conformidad continua del FCC, utilice solamente el cable de interfaz blindado cuando conecte una cámara de video digital a una computadora de acuerdo con las instrucciones incluidas aquí. También, cualquier cambio sin autorización o modificaciones a este equipo anularían la autoridad del usuario para operarlo.

rápida

utilizar la ba

oque la batería
guela.

tarjeta

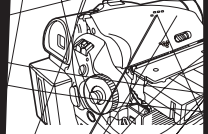
indicado
inado la ca

que la batería

frente y leva
la cubierta del co
cassette.

- Para proteger la ci
no podrá expulsars
completamente ab

Después de abrir
inserte un casset



Cierre el soporte
la marca [PUSH]

Sólo después de
cassette esté com
cierre la cubierta
cassette presiona



❷

do

Cómo util

Antes de utiliza
que las visualiz
fá

Index

A
AC Adaptor 15, 73
Audio Dubbing 53
Auto Focus 79

B
Backlight 37
Blank Search 31
Built-in LED Video Light 33

C
Camcorder Accessory Order Form 82
Camcorder Accessory System 81
Charging the Battery 15
Cinema Mode 39
Condensation 73
Cue Playback 46
Customer Services Directory 85

D
Date/Time Setting 21
Digital Zoom 36
DPOF Setting 50
Dubbing 54

E
Erasure Prevention Slider 19

F
Fade 37
Formatting a Card 51
F Number 43

I
Iris 43

J
Joystick Control 23

L
LCD Monitor 21, 75
Limited Warranty 84
List of Menus 26~28
Lock Setting 50
Low Light Mode 40

M
MagicPix Function 38
Manual Focus 44
Mode Dial 23
MotionDV STUDIO 64

O
One-Touch Navigation icon 23

P
Photoshot 32
Playback with Zoom Lever 47
Portrait Mode 40

Q
Quick Movie Magic 64
Quick Start 34

R
RapidFire Consecutive Photoshot 33
Recording Check 31
Remote Control 13
Request for Service Notice 83
Review Playback 46

S

Scene Mode 40
SD Memory Card 69
Self-timer Recording 35
Self Recording 33
Sensor tag 17
Shutter Speed 42
Slide Show 48
Slow Motion Playback 46
Sound Volume 45
SP/LP Mode 29
Spanish Quick Use Guide 87
Sports Mode 40
Spotlight Mode 40
Still Advance Playback 47
Surf & Snow Mode 40

T

Time Code 79

V

Variable Speed Search 46
Video Head Clogging 73
Viewfinder 21, 75

W

Warranty 86
Web Camera 60
White Balance 41
Wide/4:3 Function 39

Z

Zoom 35
Zoom Microphone 35

Panasonic Consumer Electronics Company,
Division of Panasonic Corporation of North America
One Panasonic Way Secaucus, New Jersey 07094

Panasonic Sales Company (“PSC”),
Division of Panasonic Puerto Rico, Inc.
Ave. 65 de Infanteria, Km. 9.5 San Gabriel Industrial Park Carolina,
Puerto Rico 00985

Panasonic Canada Inc.
5770 Ambler Drive,
Mississauga, Ontario L4W 2T3
(905) 624-5010
www.panasonic.ca

P

Printed in Indonesia
LSQT1000 B
S1105A2016